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THE
BUILDER's JEWEL:
OR, THE
YOUTH's INSTRUCTOR,
AND
WORKMAN's REMEMBRANCER.

EXPLAINING

SHORT and EASY RULES,

Made familiar to the meanest Capacity,

For DRAWING and WORKING,

I. The FIVE ORDERS of Columns entire; or any Part of an Order, without Regard to the Module or Diameter.

And to enrich them

With their Rusticks, Flutings, Cablings, Dentules, Modillions, &c.

Also to proportion

Their Doors, Windows, Intercolumnations, Portico's, and Arcades.

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With fourteen Varieties of Raking, Circular, Scrolled, Compound, and Contracted Pediments; and the true Formation and Accadering of their Raking and returned Cornices; and Mouldings for Capping their Dentules and Modillions.

II. Block and Cantaliver Cornices, Rustick Quoins, Cornices proportioned to Rooms, Angle Brackets, Mouldings for Tabernacle Frames, Pannelling, and Centering for Groins, Trussed Partitions, Girders, Roofs and Domes. With a Section of the Dome of St. PAUL's LONDON.

The Whole illustrated by upwards of 200 Examples, engraved on 100 Copper-Plates.

By B. and T. LANGLEY.

W C/S .

INTRODUCTION.

NOTWITHSTANDING there are many Volumes already extant, on the Subject of Architecture; yet, as not one of them is made a fit Size for the Pocket; and it being an Impossibility for the general Part of Workmen to retain and carry in their Minds all the useful Rules and Proportions, by which Works in general are performed: I have therefore at the Request of many good Workmen, and for the Sake of young Students, compiled this Work; wherein I have reduced the whole to such short and easy Rules, that the Workmen may, not only at the first View renew his Memory, as Occasions may require, but Apprentices, who may be absolutely unacquainted with this noble Art, and are so unfortunate as many have been, and are, to be bound to Jobbing Masters, who know but little; may without the Help of any, by assiduous Application at their leisure Hours, in Evenings when the Business of Days is over, &c. make themselves such Masters herein, that few Masters are able or willing to make them. And indeed I must own, that 'tis a Pleasure to me, to see the Spirit of Emulation so powerful among young Builders at this Time; when every one of Sense is endeavouring to become the most excellent in his Way, and thereby make himself the most useful both to himself and his Country.

IT is useful Knowledge only that makes one Man more valuable than another, and especially that Part of Knowledge, which immediately concerns the Business he is to live by; and therefore, if this Work should prove a Help to the Improvement of Knowledge in *Youth*, (for whose Sakes 'tis chiefly intended,) and be no Affront to the *sage Workman*, by re-informing him of those Rules which have slipt his Memory, and informing him of others which he never knew, it will answer the desired End of their hearty Well-wisher,

London, November 2, 1746.   THO. LANGLEY.

A 2   CHAP.

CHAP. I. *Of the Orders in general, and of their principal Parts.*

THE Orders in general, are the *Tuscan, Dorick, Ionick, Corinthian,* and *Composite.*

THEIR principal Parts, are their Pedeftals, Columns, and Entablatures.

THE Height of the Pedeftal in every Order, is always one fifth of the whole Height of the entire Order.

THE Height of the *Tuscan* Column is 7 Diameters, the *Dorick* 8, the *Ionick* 9, and the *Corinthian* and *Composite* each 10 Diameters.

THE *Tuscan* Column is diminifhed at its Aftragal or Neck of its Capital, one 4th of its Diameter next above its Bafe; the *Dorick* one 5th; the *Ionick, Corinthian,* and *Composite,* each one 6th.

THE Diminution of every Column, begins at one third of the Shaft's Height above the Bafe.

THE Heights of the *Tuscan* and *Dorick* Entablatures, are each equal to one fourth of their Column's Height; and the *Ionick, Corinthian,* and *Composite,* to one fifth of their Column's Height.

THESE general Proportions of their principal Parts being firft underftood, the Proportions of their particular Parts may be eafily underftood alfo as following.

CHAP. II. *Of* PEDESTALS, *and their Parts.*

EVERY perfect Pedeftal confifts of three principal Parts; namely, a Bafe, Dado or Die, and Cornice, which are divided as follows.

The Divifion of the principal Parts of Pedeftals explained.

RULE. Divide the given Height in 4 Parts, as in Plates I, X, XXI, XXXIX, and LVII; give the lower 1, to the Height of the Plinth; one third of the next 1, to the Height of the Mouldings on the Plinth; half the upper 1, to the Height of the Cornice; and the Remains between, will be the Height of the Dado.

WHEN a Column is placed on a Pedeftal, the Projection of the Pedeftal's Dado is found by the Projection of the Plinth to the Bafe

of

of the Column ; which always ſtands perpendicular over the Up-
right of the Dado. But if a Pedeſtal is to be made without a Co-
lumn, the Breadth of the Dado muſt be found, before we can pro-
ceed to determine the Projections of the ſeveral Members in the Baſe,
and in the Cornice ; becauſe, 'tis from the Upright of the Dado,
that their Projections are made ; and which are found by the follow-
ing Rules.

The Breadth of Dado's to Pedeſtals explained.

RULE I. *To find the Breadth of the Dado of the* Tuſcan *Pedeſtal.*
Plate I.

DIVIDE the Height of the Plinth and its Mouldings in 5 Parts,
and the upper 1 in 7 ; on z with a Radius of 4 of the great Parts,
and 4 ſevenths, deſcribe the Arch $x g$; then $z g$ is the Semi-breadth
required.

RULE II. *To find the Breadth of the Dado of the* Dorick *Pedeſtal.*
Plate X.

DIVIDE the Height of the Plinth in 5 Parts, and the upper 1 in
3 ; turn up 1 of the 3 Parts to n, and on x with the Radius of 5 Parts,
and ſaid one third, deſcribe the Arch $b y$; then $x y$ is the Semi-
breadth required.

RULE III. *To find the Breadth of the Dado of the* Ionick *Pe-
deſtal.* Plate XXI.

DIVIDE the Height of the Plinth in 3 Parts, the upper 1 in
3 ; and the upper 1 thereof, in 3 again ; then abating the 2 upper
ſmall Parts, with the Remains of the Plinth's Height, on x, deſcribe
the Arch $v y$; then $x y$ is the Semi-breadth required.

RULE IV. *To find the Breadth of the Dado of the* Corinthian
and Compoſite *Pedeſtals.* Plates XXXIX. *and* LVII.

DIVIDE the Height of the Plinth in 3 Parts, and the upper 1 in
3 ; on x, with the Radius of two Parts, and 2 thirds, deſcribe the
Arch $v y$; then $x y$ is the Semi-breadth required.

BEFORE I ſhew how to determine the Projections of the Mouldings
on the Plinths, and in the Cornices of the Pedeſtals, I muſt ſhew
how to divide their reſpective Heights. And, firſt, of the Mould-
ings on the Plinths of the ſeveral Pedeſtals. *The*

The Divisions of Mouldings on the Plinths of Pedestals explained.

RULE I. *To divide the Heights of the Mouldings on the Plinth of the* Tuscan *Pedestal.* Plate I.

DIVIDE the Height in 6, as at B; give the under and upper ones to the Fillets, and the Middle of 4, to the *Cima recta.*

RULE II. *To divide the Heights of the Mouldings on the Plinth of the* Ionick *Pedestal.* Plate X.

DIVIDE the Height in 4 Parts, as at B; give the upper one to the Cavetto; half the next to its Fillet; half the lower one to the lower Fillet; and the Remains to the *Cima recta.*

RULE III. *To divide the Heights of the Mouldings on the Plinth of the* Ionick *Pedestal.* Plate XXI.

DIVIDE the Height in 2, as at B; and each in 4; give the upper 1 and half to the Cavetto; the next half to its Fillet; the next 1 to the Astragal; the lower 1 to the Fillet; and the Remains to the **Cima.**

RULE IV. *To divide the Heights of the Mouldings on the Plinth of the* Corinthian *Pedestal.* Plate XXXIX.

DIVIDE the Height in 4, as at B; the upper 1 and 3d downwards, each in 3; give the upper 1 and half to the Cavetto; the next half to the Fillet; the next 1 to the Astragal; the lower 4th to the Height of the Torus; and one third of the next, to its Fillet.

RULE V. *To divide the Heights of the Mouldings on the Plinth of the* Composite *Pedestal.* Plate LVII.

DIVIDE the Height in 4; and the upper and third Part downwards, each in 3; give the upper 2 of the upper Part to the Cavetto; the next 1 to its Fillet; the lower 4th Part to the Torus; and one third of the next Part to its Fillet.

The Division of Mouldings in the Cornices of Pedestals explained.

RULE I. *To divide the Heights of the Mouldings contained in the Cornice of the* Tuscan *Pedestal.* Plate I.

DIVIDE the Height as at A in 6 Parts; give the upper 1 to the Regula; the next 3 to the Plat-band, and the lower 2, to the *Cima reversa.*

RULE

RULE II. *To divide the Heights of the Mouldings contained in the Cornice of the* Dorick *Pedeſtal.* Plate X.

DIVIDE the Height as at A in 4; give half the upper 1 to the Regula; the next 1 and half, to the Plat-band; the next 1 to the Ovolo; the upper one third of the lower 1, to the Fillet; and the remaining two thirds of the lower 1, to the Cavetto.

RULE III. *To divide the Heights of the Mouldings contained in the Cornice of the* Ionick *Pedeſtal.* Plate XXI.

DIVIDE the Height in 12 Parts, as at A; give the upper to the Regula; the next 2 to its *Cima reverſa*; the next 3 to the Plat-band; the next 3 to the Ovolo; the next 1 to the Aſtragal; half the next 1 to its Fillet; and the Remains, 1 and a half, to the Cavetto.

RULE IV. *To divide the Heights of the Mouldings contained in the Cornice of the* Corinthian *Pedeſtal.* Plate XXXIX.

DIVIDE the Height in 3, as at A; alſo the upper 1 in 6, the lower half of the middle 1 in 3, and the lower half of the lower 1 in 3. Of the 6 upper ſmall Parts, give the upper 1 and one third to the Regula; the remaining two thirds and two Parts, to the *Cima reverſa*; and the next 1 to the Aſtragal. Give the laſt 1, and half the middle great Part, to the Plat-band: Alſo one third of the remaining half, to the Fillet on the *Cima recta*; and the remaining two thirds, and the upper half of the lower great Part, to the *Cima recta*. Laſtly, give the upper 1 Part of the half of the lower Part, to the Aſtragal; half the next to its Fillet, and the Remains to the Cavetto.

RULE V. *To divide the Heights of the Mouldings contained in the Cornice of the* Compoſite *Pedeſtal.* Plate LVII.

DIVIDE the Height in 6 Parts, as at A; give half the upper 1 to the Regula; the next 1 to the *Cima reverſa*; the next 1 and half to the Plat-band; one third of the next 1, to the Fillet on the *Cima recta*; the remaining two thirds, and the next 1, to the *Cima recta*; one third of the laſt 1, to the Fillet on the Cavetto; and the remaining two thirds to the Cavetto.

THE

THE Heights of the several Mouldings on the Plinths, and in the Cornices, being thus found; I shall proceed to shew how to give each its proper Projecture from the Upright of their Dado's.

The Projections of the Plinths, and Members on the Plinths, and in the Cornices of Pedestals explained.

MAKE the Projection of the Plinth from the Upright of its Dado, in every Order, equal to the Height of the Mouldings on the Plinth; and make the Projection of every Cornice the same.

To find the Projections of the several Members.

DIVIDE the Projection of the *Tuscan* Plinth in 6, and of all the other Orders in 4; and then subdividing the Parts, as exhibited in the Scales of Projection, which are placed between the Base and Cornice of each Pedestal: from thence, stop; or terminate the Projection of each Member, as by Inspection is shewn; and thus are the five Orders of Pedestals compleated.

CHAP. III. *Of Columns and their Parts.*

A COLUMN consists of three principal Parts, *viz.* A Base, Shaft, and Capital.

The Heights of Columns explained.

To find the Heights of Columns, having the Heights of the Columns and Entablatures given, these are the Rules.

RULE I. *In the* Tuscan *and* Dorick *Orders.* Plates I. and X.

DIVIDE the given Height of the Column and Entablature in 5 Parts; the upper 1 is the Height of the Entablature, and the lower 4 of the Column. Divide the Height of the *Tuscan* Column in 7, and of the *Dorick* in 8; and 1 is the Diameter of the Column.

RULE II. *In the* Ionick, Corinthian, *and* Composite *Orders.* Plates XXI. XXXIX. *and* LVII.

DIVIDE the given Height of the Column and Entablature in 6 Parts; the upper 1 is the Height of the Entablature, and the lower 5 of the Column. Divide the Height of the *Ionick* Column in 9, and the *Corinthian* and *Composite* Columns each in 10 Parts, and 1 is the Diameter.

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The Heights and Projections of the Bases of Columns explained.

THE Height of the Base of every Column, is precisely half its Diameter next above the Base ; and the Projection of the Plinth, from the Upright of the Shaft, is always equal to one 6th of the Column's Diameter.

The Height of Plinths to the Bases of Columns, is either equal to half the Height of the whole Base, as in the *Tuscan* Base, Plate II. or to one third of the Base's Height, as in the *Dorick* Base on the Right hand Side, Plate XI. And in the *Ionick, Corinthian,* and *Composite* Bases, Plates XXII. XLI. *and* LVIII.

To make the Construction of Bases to Columns easy, I will explain, how to divide the Heights, and terminate the Projections of the Members contained in the *Tuscan* and *Dorick* Bases ; by which those of the *Ionick, Corinthian,* and *Composite* will be understood, as being no more than Repetitions of the like Rules.

RULE I. *To divide the Heights, and terminate the Projections of the Members contained in the Base of the* Tuscan *Column.* Plate II.

I. *To determine their Heights.*

DIVIDE the Height in two, and give the lower 1 to the Plinth as aforesaid. Divide the upper 1 in 4 ; give the lower 3 to the Torus, and the upper 1 to the Cincture.

II. *To determine their Projectures.*

DIVIDE the Projection of the Plinth, from the Upright of the Shaft in 4 Parts, and the second Part in 4 ; then 1 Part and 3 fourths of the second, stops the Cincture ; and the Torus is always in every Order the same Projection as the Plinth.

RULE II. *To divide the Heights, and terminate the Projections of the Members contained in the* Attick *Base to the* Dorick *Column, on the Right-hand Side of* Plate XI.

I. *To determine their Heights.*

DIVIDE the Height in 3 Parts; the middle Part in 4, and the upper Part in 2: Give the lower 1 Part to the Plinth, as aforesaid ; three fourths of the next to the lower Torus ; and half the upper 1 to the upper Torus. Divide the Remainder between the two

B   Torus's

Torus's in 6; give the upper and lower ones to the two Fillets; and the middle 4 to the *Scotia*.

II. *To determine their Projectures.*

DIVIDE the Projection of the Plinth in 4 Parts, and the 2d and 3d Parts in Halves: From whence perpendicular Lines being drawn up, will terminate the Cincture, and the two Fillets of the *Scotia*.

RULE I. *To describe the Curve of this* Scotia.

DIVIDE the Height in 3 Parts, as at B; and draw the Lines *c b* 2 and *a b*. On *b*, describe the Quadrant *a c*; and on the Point 2, the Arch *c d*, which together form the Curve of the *Scotia* to the *Attick* Base.

I will also now shew how to describe the Scotia *in the* Ionick, Corinthian, *and* Composite *Bases, as expressed at large by Figure* A. *Plate* XLI.

DIVIDE the Height *b g* in 7 Parts; from the third Part draw *f c* parallel to the Fillets, and equal to 3 Parts; thro' the Point *f* draw the Line *a e* parallel to *b g*, and make *f a* equal to 4 Parts of *b g*. Draw *a c*, and then, on the Point *c*, describe the Arch *b x d*, and on *a* the Arch *d e*.

HAVING thus explained the Bases, or first Parts of Columns, I shall now proceed to the second Parts, which is their Shafts.

THE Shaft of a Column is that Part, which is contained between its Base and Capital; and consists of 3 Parts, *viz.* its Cincture, Trunk, and Astragal; excepting in the *Tuscan*, where the Cincture is made a Part of the Base to the Column.

To render the Shafts of Columns agreeable to the taper Growth of the Trunks of Trees, (with which the first Columns were made) their Shafts, or rather their Trunks are therefore diminished from the lower third Part, up unto the Astragal, as following.

The Shafts of Columns, and their Diminution explained.

RULE. *To diminish the Shafts of a Column.* Plate I. Fig. A.

SET up the Shaft's Height; at *i k*, its Astragal, set off its diminished Diameter, *viz.* three fourths, as being *Tuscan*. Compleat the lower third undiminished Part of the Shaft, and on *a d* its upper
Part

Part deſcribe the Semicircle *a b c d*. From *i k*, draw the Lines *i b*, *k c*, parallel to *h n* the central Line, cutting the Semicircle in *b* and *c*. Divide the Arches *a b* and *c d*, each into any ſame Number of Parts; ſuppoſe 4; and divide *h n* into the ſame Number of Parts alſo, as at the Points *g f e*; through which draw right Lines at right Angles to *h n* of Length at Pleaſure. From the 4 Diviſions in the Arch *a b*, to thoſe in the Arch *c d*, draw Ordinates (as thoſe dotted.) Make the Diameter of the Shaft at *e*, equal to the Length of the firſt Ordinate; at *f*, to the Length of the ſecond Ordinate; and at *g*, to the Length of the third Ordinate. Then from the Points *i k*, through the Extreams of the Diameters *g f e*, to the Points *a d*, trace the Contours or Out-Lines of the Shaft's Dimi-nution.

The Manner of Ruſticating the Shafts of Columns explained.

THE Shafts of the *Tuſcan*, *Dorick*, and *Ionick* Columns, are ſome-times ruſticated; but thoſe of the *Corinthian* and *Compoſite* ſeldom or ever.

RULE. *To ruſticate the* Tuſcan, Dorick, *and* Ionick *Shafts*.

DIVIDE the Height of the *Tuſcan* in 7, as in Plate I. the *Dorick* in 8, as in Plate X. and the *Ionick* in 9, as in Plate XXI; then the Blocks and Intervals in the *Tuſcan* and *Ionick* will each be 1 Diame-ter, and thoſe of the *Dorick* 2 Diameters.

THE Projection of the Blocks are generally made equal to the Projection of the Plinth, as expreſſed in the *Tuſcan* Order, Plate I. and continued upright without Diminution; but as the upper Parts of the Shafts ſeem thereby overcharged, I therefore recommend the Diminution to be parallel with the Shaft, as in the *Dorick* Order, Plate X.

The Manner of Fluting the Shafts of Columns explained.

THE Shafts of the *Dorick*, *Ionick*, *Corinthian*, and *Compoſite* Co-lumns, are ſometimes fluted and cabled; but the Shaft of the *Tuſcan* Column ſeldom or ever was, as being an Embelliſhment too gaudy for ſo robuſt and ſimple an Order, whoſe Beauty conſiſts in its na-tive Plainneſs; and indeed all Columns have a grander Aſpect when

entirely

entirely plain, than when rufticated or fluted. The *Dorick* Shaft, with refpect to its *Herculean* Afpect, fhould not be fluted ; but as the Ancients difpenfed therewith, the Moderns frequently do the fame. But however, as herein Majefty muft be preferved, therefore the Ancients allowed but 20 Flutes, and thofe without Fillets, as in the Left-fide of Plate XI. thereby making them of a mafculine Afpect ; whilft thofe of the *Ionick* and *Corinthian* Shafts are charged with 24 Flutes, and as many Fillets (each of which are equal to one third of a Flute) which renders them lefs capacious and of an effeminate Afpect, agreeable to the Characters of thofe Orders.

RULE. *To divide the Flutes of a* Dorick *Column.* Plate XI.

DIVIDE the Circumference into 20 equal Parts, and draw Lines, thereby making a Polygon of 20 Sides ; on each Side compleat an equilateral fpherical Triangle, as *a b c* on the Left of Plate XI. and on the external Angle, as *b*, defcribe the Curve *a c*, which is the Depth or Sinking in of a Flute.

RULE. *To divide the Flutes and Fillets of an* Ionick, Corin- thian, *or* Compofite *Column.* Plate XXV.

DIVIDE the Circumference of the Semi-Column in 12 Parts, and each Part in 8, as *a b.* Give 3 Parts to each Semi-Flute, as *a b*, and *i b* ; and 2 Parts to each Fillet, as *h i*

THE Sinkings or Depths of thefe Fillets, are either the Arch of a Quadrant, as thofe on the Right-hand defcribed on the Centers *c e*, &c. or of a Semi-circle, as thofe on the Left, defcribed on the Centers *x x*, &c.

RULE. *To defcribe Cablings, in the Flutes of a Column.* Plate XXV.

ON the Points *z z*, with the Radius *z x*, defcribe the Arches *y x o*, *y x o*, &c. which are the Bafes of the Cablings, and whofe Height finifhes at the firft third Part of the Shaft's Height.

RULE. *To fet out Flutes and Fillets on the Shaft of a Column.* Plate XXVI.

ON a Pannel, *&c.* draw a right Line, as *a b*, and thereon fet off
24 equal

24 equal Parts at Pleasure, which together must always be less than the Girt at the Astragal of the Column to be fluted.

DIVIDE any 1 Part in 4 Parts, and take 1 Part in the Compasses, and set it off in every of the other 23 Parts; and from the several Parts so divided (which will be to one another as 1 to 3; that is, a Fillet to a Flute) draw up right Lines at right Angles from the divided Line. This done, strike a perpendicular Chalk-Line down the Front of the Column. And being provided with two straight-edged Pieces of Parchment, &c. therewith girt the Column at its Base, and at its Astragal. Apply the Girts so taken to the parallel Lines aforesaid, so that their Extreams shall just touch the two outer Parallels, as at *e c* and *d f*. Then keeping them there, with a Pencil mark their Edges at the Meeting of each Parallel; and thereby the two Girts will be divided into the Flutes and Fillets, agreeable to your Column to be fluted. This done, apply any End of each of the Parchment Girts to the Bottom and the Top of the Front central Line; and then embracing the Column at its Base and Astragal, remove each Girt until you bring the Middle of a Flute on the central Line; and then prick off the Breadth of every Flute and Fillet in the two Girts, which will stand exactly perpendicular over each other.

Note, IN large Columns it may be necessary to set out the Breadths of the Flutes and Fillets, in one or more Places, between the first third Part of the Shaft's Height and the Astragal; which, when required, may be most exactly done, by girting at the Parts required; and proceeding afterwards in every other respect, as aforesaid.

The Fluting of Pilasters explained.

RULE. *To flute a Pilaster with Fillets, and a Bead at each Quoin.* Plate XXXVII.

DRAW a Line at Pleasure, as *a b*, and thereon set 31 equal Parts, which together shall be greater than the Pilaster to be fluted. Take the 31 Parts in your Compasses, &c. and on the first and last Points make the Section *c*, and draw the Lines *c a* and *c b*, which will compleat an equilateral Triangle. Set the Breadth of the Pilaster

from

from *c* to *d*, and to *e*, and draw the Line *d e*, which being parallel to *a b*, is therefore equal to the Breadth of the Pilaster. Now right Lines drawn, from the 31 Parts, to the Point *c*, they will divide the Line *d e* in similar 31 Parts also. Of which give the 2 outer Parts to the 2 Beads at the Quoins; the next 2 outer ones, to the 2 outer Fillets; the next 3, to the Breadth of a Flute; the next 1, to a Fillet; the next 3, to a Flute; the next 1, to a Fillet, &*c*.

N o t e, by the same Rule a Pilaster with Flutes and Fillets only, as Fig. A. is divided from 29 Parts, first set off at Pleasure; and then proceeding as before.

H a v i n g thus explained the Bases and Shafts of Columns, &*c*. I shall now proceed to their Capitals.

O f Capitals, there are two Kinds, *viz.* the one consisting of Mouldings only, as those of the *Tuscan* and *Dorick*; and the other of Mouldings and sculptured Ornaments, as the *Ionick, Corinthian,* and *Composite*.

The Heights of Capitals explained.

T h e Height of the *Tuscan* and *Dorick* Capitals, are each precisely a Semidiameter, as in Plates II. and XI. The Height of the ancient *Ionick* Capital, in its Mouldings above the Astragal of the Shaft, is but one third of a Diameter, or 20 Minutes; but including the Depth of its Volute, 'tis 35 Minutes, as in Plate XXIII. which exceeds the Volute to the modern Capital by 5 Minutes. The Height of the *Corinthian* Capital is one Diameter and one sixth, as also is the Height of the *Composite* Capital.

The Divisions and Projections of the Members in the Tuscan *and* Dorick *Capitals explained.* Plates II. and XI.

R U L E I. To divide the Heights and determine the Projections of the Members in the Capital of a *Tuscan* Column or Pilaster.

I. *To divide the Heights of the Members.* Plate II.

D i v i d e the Height in 3 Parts (as on the Left-side.) Divide the middle 1 in 6: of which give the lower to the Fillet under the Ovolo; and the other 5 to the Ovolo. Divide the upper 1 into 4; give the upper 1 to the Fillet; and the other 3 to the Fascia of

the

the Abacus. Set down *a b*, half the Height of the Frize or Neck of the Capital, from *b* to *c*, and divide it in 3 Parts; give the upper 2 to the Aſtragal; and the lower 1 to its Fillet.

II. *To determine their Projections.*

DIVIDE the Semi-diamer of the Column at its Aſtragal (as is done above on the Capital) in 6 Parts, and give 3 to the Projection of the upper Fillet.

BUT if the Capital is of an undiminiſhed Pilaſter, (as on the Right-hand Side of Plate II.) then divide the Semi-diameter of the Pilaſter (as above on the Capital) in 8 Parts, and give 3 to the Projection, as before.

NOTE, By the Scale of Projection, placed againſt the Neck of the Capital, you ſee that the whole Projection is divided in 3; the firſt 1, in 2; and the laſt 1, in 4; the half of the firſt 1 ſtops the Projection of the Fillets under the Aſtragal and Ovolo; and the 2 firſt of the 4, in the outer 1 third Part, ſtops the Ovolo and Faſcia of the Abacus.

RULE II. *To divide the Heights, and determine the Projections of the Members contained in the Capital of a* Dorick *Column or Pilaſter.* Plate XI.

I. *To divide the Heights of the Members.*

DIVIDE the Height in 3 Parts (as on the Left-ſide.) Divide the middle 1 in 3; of which the lower 1 divided in 3, give the upper 2 to the Aſtragal, and lower 1 to the Fillet. Divide the upper 3d Part in 3; give the lower 2 to the Faſcia of the Abacus; and the upper 1 thereof divided in 3, give the upper 1 to the Fillet, and the lower 2 to the *Cima reverſa.*

NOTE, The Height of the Aſtragal to the Shaft is found, as before, in the *Tuſcan* Column, Page 11.

II. *To determine their Projections.*

DIVIDE the Semi-diameter of the Column at its Aſtragal (as above on the Capital) in 4; and give 2 to the Projection of the upper Fillet. But if the Capital is of an undiminiſhed Pilaſter, (as on the Right-hand Side) then divide the Semi-diameter of the Pilaſter

(as

(as above on the Capital) in 5 Parts, and give 2 to the Projection, as before.

By the Scales of Projection on each Side of the Capital, you see, that the whole Projection is there divided in 4 Parts; from which, and their Sub-divisions, the several Members in the two Varieties of Capitals have their Projections determined.

The antient Ionick *Capital, and its Volute explained.* Plate XXIII.

RULE I.   To divide the Height of its Members, and describe its Volute.

I. *To divide the Height of its Members.*

DIVIDE the given Height as *k x*, in 11 Parts; give the upper 1 to the upper Fillet; the next 2 to the *Cima reversa*, which with the aforesaid Fillet makes the Abacus: give the next 1 to the Lift of the Volute; the next 3 to the Band of the Volute; and the remaining 4 to the Ovolo.   This done, set down 8 of the above 11 Parts from *x* to I; give the first 2 to the Astragal; the next 1 to its Fillet; and the lower 5 to the Depth of the Volute.   Divide *r s* on the Right-hand (which is equal to *k x*, or 20 Minutes, the Height of the Mouldings of the Capital) in 4 Parts, and turn down 1 Part to *d*; then *r d* will be equal to 25 Minutes, which is equal to the Semi-diameter of the Column at its Shaft.   Now admitting *b v* to be the central Line of the Column, make *v c* equal to *r d*, and draw the Line *e c h*, which will be the upright of the Column.   Make *h g* equal to two thirds of *a* 1, the Height of the Astragal; and from the Point *g* draw the Cathetus or Line *f g*, parallel to the central Line.   Divide *g h* in 4 Parts; the first 1 stops the Astragal at *a*. Make *f n* equal to *f i*, which will terminate the Projection of the Abacus.

RULE II.   *To describe the* Ionick *Volute.*   Plate XXIII.

FROM 1 Part below *x*, draw the Line *p m o* for the central Line of the Astragal, intersecting the Cathetus *i g* in *o*.   On the Point *o*, with the Radius *o z*, describe the Circle or Eye of the Volute (which is represented at large by the Figure R,) wherein inscribe the Geo-metrical Square, and draw its Diameters 2, 4; and 1, 3; divide
each

each Semi-diameter in 3 Parts, as at the Points 6.10; 5.9; 12.6; and 11.7 : which are the Centers numbered in Order, on which the Out-line of the Volute is described, *viz.* The Point 1 is the Center to the Arch *i m*; the Point 2, of the Arch *m g*; the Point 3, of the Arch *g p*, &c.

THE inward Line of the Lift of the Volute is described on 12 other Centers, which are at one fifth of the Distance between the other 12 Centers, and which are signified by the small Divisions next within the 12 Centers in the Eye of the Volute at large, in Plate XXII.

To gradually diminish the Lift of this Volute, we must divide its Height or Breadth in 12 Parts, as expressed above, in Plate XXII. and at every Quarter of its Rotation abate its Breadth 1 of those Parts, as expressed by the numerical Figures affixed; which will cause it to terminate at the Eye in a Point.

NOTE, Fig. AB, Plate XXIII. is a View of half a Side of the Capital, wherein B shews the Thickness of the Volute, whose Height is equal to *i g* in the Front. The Heights of the other Parts, are shewn by the Scale of Parts on the Left; and is the same as the like Scale above.

NOTE, The Abacus to this Capital being square, is therefore called by Workmen a *Trencher-Capital*; and indeed very properly, because the Word *Abacus* is derived from the Greek Word *Abax*, signifying a square Trencher.

The modern Ionick *Capital explained.*   Plate XXIV.

RULE. *To divide the Heights of the Members contained in its Abacus, and to determine their Projections.*

THIS Capital, tho' called Modern, was invented by VINCENT SCAMMOZZI; and, including its Volute, is precisely half a Diameter in Height.

I. *To find the Heights of the Members.*

DIVIDE its Height in 3 Parts, and the upper half of the upper 1 in 4, as on the Left; of which give the upper 3 to the Ovolo, and the other 1 to the Fillet under it. Divide the lower 2 Parts and

C   half

half in 8 Parts (as on the Right) give the upper 1 and half to the Fafcia of the Abacus; the next half to the Recefs under the Abacus; the next 2 to the Ovolo; the next 1, to the Aftragal; and the next half to its Fillet.

II. *To find the Projectures of the Members.*

Draw the central Line of the Column *h g*; and in any Place, as at *g*, draw the Line *a b* at right Angles to *h g*, and of Length at Pleafure.   Make *g c* and *g d*, each equal to the Semi-diameter *i k*; and divide it into 12 Parts, each reprefenting 5 Minutes (or 1 12th of a Diameter;) make *c a* and *d b*, each equal to 15 Minutes, or 1 fourth of the Diameter, which terminates the Projection of the extreme Parts or returned Horns of the Abacus; as exhibited by the dotted parallel Lines draw thence up to them.

And from the Sub-divifions of the 2 outer 5 Minutes, the Projections of the other Parts of the Abacus are determined in the fame Manner; as alfo are the Projections of the Ovolo, Aftragal, and Fillet, reprefented by dotted Lines within the Volute.

The Volute of this Capital is reprefented in Plate XXII. and is defcribed the fame as that of the ancient Capital; for tho' it appears to be elliptical when feen in a direct View, as being thereby fomething fore-fhortened, yet 'tis circular, as the other.

Under this Capital I have placed half its Plan; whofe Conftruction being plainly exhibited by the dotted perpendicular Lines, proceeding from the Members in the Elevation, needs no further Explanation.

The Corinthian *Capital explained.*   Plate XLI.

This Capital was originally adorned with the Acanthus Leaves only; but as fome delight in Variety, I have therefore in Plate XL. given the Acanthus with the Olive, Laurel, and Parfley, to be employed at Difcretion.

The Height of this Capital was originally but 1 Diameter; but modern Architects thinking it too fhort, they therefore added 10 Minutes, thereby making its Height 70 Minutes, and giving it a much more magnificent Afpect than it had before.

By

By the Meafures affixed, which is no more than the Height divided in 7 Parts, of which the upper 1 is the Abacus, the Height of every Part is adjufted; and by the Plan and Elevation in Plate XLII. the Breadths and Diftances of the Leaves, &c. are fully exemplified in the like Manner.

In the Drawing of this Capital, the young Student muft firft accuftom himfelf to exprefs only the Leaves in Grofs, as exprefled in this and the XLIVth Plate, until he has made himfelf a Mafter of forming their Out-lines; when 'twill be a Pleafure to raffle them, as exprefled in Plates XLIII. and XLV.

And as the Capital of a Pilafter has all its Leaves in each Face in a direct View, contrary to thofe of a Capital to a Column, and is one fixth of a Diameter more in Breadth; I have therefore, to explain the Difference and Parts, fhewn in Plate XLIV. the Plan and Elevation of a Capital to a Pilafter, in the fame Manner as that of a Column in Plate XLII. as indeed I have alfo the Elevation of a half Capital at large, with its Leaves raffled, as thofe of Plate XLIII.

The Compofite *Capital explained.* Plate LVIII.

This Order is called *Compofite*, becaufe its Capital is compofed of the *Ionick* and *Corinthian* Capitals; that is, its Abacus, Volutes, Ovolo, and Aftragal between them, are the very Members which form the Modern *Ionick* Capital. Its two Heights of Leaves, are the very fame as thofe in the *Corinthian* Capital; and its Stalks, which in the *Corinthian* Capital finifh with Volutes and Helices, are here ftopt by the *Ionick* Volutes, and made to finifh inwardly with Hufks on Tendrels, called Caulicole's.

The Height of this Capital is the fame as that of the *Corinthian,* and is divided in 7 Parts alfo, of which the upper 1 is the Height of the Abacus; and which being divided in 2, and the upper 1 in 5, the upper 4 is the Height of the Ovolo, and the lower 2 of the Fillet. Divide the lower half of the Height of the Abacus with the next two Parts into 1, and then finifh the Volutes exactly the fame, as in the Modern *Ionick* Capital. Plate XXIV.

C 2

Now,

Now, as the remaining Part of this Capital is entirely *Corinthian*, as before proved, 'tis needlefs to fay more thereof; but that it may be fully exemplified, I have therefore fhewn its Elevation at large in Plates LIX. and LX. as well for a Pilafter, as for a Column; as I have done before in the *Corinthian* Order.

C H A P. IV. *Of Entablatures.*

AN Entablature is the uppermoft or laft principal Part of an Order, (which *Vitruvius* called *Ornament)* and confifts of 3 Parts, *viz.* an Architrave, a Freeze or Frize, and a Cornice.

THE Heights of Entablatures being declared in Chap. I. we are now to obferve that their Projections are equal to their Heights, in all the Orders, excepting the *Dorick*, and that only but when its Mutules are introduced; when it then confifts of half the Entablature's whole Height.

THE Heights of the feveral Entablatures are thus divided into their Architraves, Frizes, Cornices, &c.

RULE I. *To divide the* Tufcan *Entablature into its Architrave, Frize, Cornice,* &c. Plate III.

Firft, DIVIDE the given Height into 7 Parts; give 2 to the Architrave, 2 to the Frize, and 3 to the Cornice.

Secondly, DIVIDE the Height of the Architrave in 7 Parts; give 2 to the lower Fafcia, 4 to the upper Fafcia, and 1 to the Tenia, whofe Projection is equal to its Height; and which being divided in 3, give 1 to the Projection of the upper Fafcia.

Thirdly, DIVIDE the Height of the Cornice in 3; divide the upper 1 in 4, and give the upper 1 Part to the Regula, and the other 3 to the *Cima recta.* Divide the middle 1 in 6; give the upper 1 to the Fillet, and the other 5 to the Corona. Divide the lower 1 in 2; give the upper 1 to the Ovolo; and the lower half divided in 4, give the upper 1 to the Fillet, and the other 3 to the Cavetto.

BY the Scale of Projection is feen, that the Projection of the Corona is two thirds; the Ovolo, one third; and the Fillet of the Cavetto, one fixth of the whole.

NOTE,

NOTE, By well underſtanding the Manner of proportioning this Entablature, (which is very eaſy) the others following will become as eaſy : But that the young Student may not be at any ſtand there-in, I will, for a further Explanation, explain the Entablatures of the *Dorick* and *Ionick* Orders in the ſame Manner.

RULE II. *To divide the* Dorick *Entablature into its Archi-trave*, *Frize*, *Cornice*, &c. Plate XII.

Firſt, DIVIDE the Height in 8 Parts ; give 2 to the Architrave, 3 to the Frize, and 3 to the Cornice.

Secondly, DIVIDE the upper 1 of the Architrave into 3, and give the upper 1 to the Tenia : Divide the lower 2 in 6 ; give the upper 1 to the Fillet over the Gutta's, and the next 3 to the Gutta's.

DIVIDE the lower third Part of the Height of the Cornice in 3 ; and give the lower 1 to the Cap of the Triglyph. Divide the re-maining Part of the Cornice's Height in 4 Parts, and the upper 1 Part in 4 ; of which give the upper 1 to the Regula, or upper Fillet on the *Cima recta* ; and the lower 3 to the *Cima recta*. The next Part divided in 3, half the upper 1 is the Fillet ; and the Remainder the Corona. The next Part being alſo divided in 3, the upper 1 is the Capping of the Mutule, and the lower 2 the Mutule. Laſtly, the lower 4th Part divided in 3, the upper 1 is the Depth of the Ground to the Mutules; and half the lower 1 is the Fillet to the Ovolo of the Bed-mould.

THE Projection of this Cornice (as before obſerved) is half the Height of the whole Entablature ; and which being divided in 4, as on the *Cima recta*, has the Projections of its Members determined, as by Inſpection is ſhewn.

Now 'tis to be noted, That the Breadth of a Triglyph is always equal to half the Column's Diameter at its Baſe ; that its Channel-lings and Gutta's are found by dividing the Breadth of the Triglyph into 12 Parts, as exhibited at large in Plate XIII. That the Diſ-tances between the Triglyphs muſt always be equal to the Height of the Frize, and therefore will become exactly ſquare. That theſe Intervals or Spaces are called Metopes ; and are ſometimes enriched

with

with Roſes, as here expreſſed, or otherwiſe at the Pleaſure of the Architect; and that the Manner of forming the Planceer of this Cornice is ſhewn in Plate XIV.

RULE III. *To divide the* Ionick *Entablatures into the Architrave, Frize, Cornice,* &c.

As this Order has two Varieties of Entablatures, *viz.* the one with Dentules, and the other with Modillions; I have therefore ſhewn them both, and by explaining of one, the other will be underſtood.

To divide the Ionick *Entablature with Dentules.* Plate XXVIII.

Firſt, DIVIDE the Height in 10 Parts, give 3 to the Architrave, 3 to the Frize, and 4 to the Cornice.

Secondly, DIVIDE the upper 1 Part of the Architrave in 4; give the upper 1 to the Fillet; the next 2, and 1 fourth of the lower 1 to the *Cima reverſa*; and the remaining 3 fourths of the lower 1 to the Bead. Theſe Members together are called the Tenia of the Architrave, whoſe Fillet's Projection is equal to their whole Heights.

Thirdly, As the Frize of this Order is made ſwelling, therefore divide the Height in 4, and on the middle 2 make the Section *x*, on which deſcribe the Curve of the Frize.

Fourthly, THE Height of the Cornice being in 4 Parts, divide the upper 1 in 4; give the upper 1 to the Regula or Fillet on the *Cima recta*, and the remaining 2, with 2 thirds of the lower 1, to the *Cima recta*; and the 1 third give to the Fillet on the *Cima reverſa*.

DIVIDE the next Part in 4; give the upper 1 to the *Cima recta*, and the other 3 to the Corona.

DIVIDE the next or 3d Part in 6; give the upper 3 to the Ovolo, the next 1 to its Fillet, and the next 1 to the Fillet between the Dentules.

DIVIDE the lower 1 in 3; the upper 1 will terminate the Depth of the Dentules. Divide the Middle 1 in 3, and the upper 1 will be the Depth of the Denticule or Faſcia, on which the Dentules are fixed,

fixed, and the Remains will be the *Cima reverfa*, and lower Member of the Entablature.

THE Projection is divided into 4 principal Parts, as by the Scale againſt the Frize is ſhewn, by which its Members are terminated, as by Inſpection is plain.

To divide the Ionick *Dentules.*

IN an Entablature over a Column, divide the Diſtance between the central Line, and the Upright of the Shaft at its Neck, into 10 Parts; give 2 Parts to the Breadth of a Dentule, and 1 to an Interval. But in an Entablature over an undiminiſhed Pilaſter, divide the aforeſaid Diſtance into 12 Parts, and proceed as before.

Note, THE Breadth of a Dentule is 5 Minutes, and of an Interval 2 Minutes and a half, which are deſcribed at large in Plate XXX.

. NOW, as the *Ionick* Entablature with Modillions, as expreſſed in Plate XXIX. has its Members proportioned in like Manner, I therefore need only to note, That the Breadth of each Modillion is 10 Minutes; that the Diſtance or Interval between them, is 25 Minutes in an Entablature to a Column, and 30 Minutes in an Entablature to an undiminiſhed Pilaſter. And that the Curve of the Sophete of the *Ionick* Modillion, is deſcribed at large in Plate XXX. as following.

The Height and Projecture being before found,

DIVIDE the Length in 6 Parts; and on the Point 5 erect the Perpendiular 5 *a* equal to 2 Parts and a half; alſo from the Point 2, let fall the Perpendicular 2 *b*, equal to 1 Part and a half, and draw the Line *a b*. On the Point 2, deſcribe the Arch 1 *d*; on the Point *b*, the Arch *d c*; and on the Point *a*, the Arch *c* 5.

Note, THE Manner of forming the Return of the Planceer of this Cornice, is ſhewn in Plate XXXI.

RULE III. *To divide the* Corinthian *Entablature into its Architrave, Frize, and Cornice.* Plate XLVI.

1. DIVIDE the Height into 10 Parts; give 3 to the Architrave, 3 to the Frize, and 4 to the Cornice.

2. DIVIDE the Height of the Architrave, and of the Cornice, each in 5 Parts, and ſub-divide them as exhibited; and then proceed in every Reſpect as in the preceding Orders. *Note,*

Note, THAT tho' the Dentules are expreſſed in this Cornice, yet they are not always uſed.

THAT the Breadth of the Modillions are 10 Minutes, as before in the *Ionick*, but their Diſtances are greater.

THE Interval between Modillions in a Cornice over Columns is 25 Minutes; and in a Cornice over undiminiſhed Pilaſters, 30 Minutes.

To render the Parts of this Modillion plain and intelligible, I have ſhewn it at large in Front and Profile, with its Meaſures, in Plate XLVII. wherein Fig. A repreſents the Eye of its Volute at large, with the Centers numbered; on which its Curves are deſcribed in the very ſame Manner, as the Volute of the *Ionick* Capital.

BETWEEN the Modillions the Planceer of the Sophete of the Corona is enriched with Roſes in hollow Pannels, called Coffers, as expreſſed in Plate XLVIII. which alſo ſhews the Manner of returning the Sophete at an external Angle.

RULE IV. *To divide the* Compoſite *Entablature into its Architrave, Frize, and Cornice.* Plate LXI.

Firſt, DIVIDE the Height into 10 Parts; give 3 to the Architrave, 3 to the Frize, and 4 to the Cornice.

Secondly, DIVIDE the Heights of the Architrave, and of the Cornice, each into 4; ſubdivide their Parts, draw in and terminate their Members by the Scale of Projection, as before done in the preceding Orders. The Manner of enriching the Planceer of the Corona of this Cornice, and returning it at an external Angle, is exhibited in Plate LXII.

CHAP. V. *Of Doors,* Windows, *Portico's,* Arcades, *and the Intercolumnation of Columns in general.*

THAT the Young Student may have Pleaſure in the Proceſs of his Study, I have given him an Example of a Door ſquare and circular-headed, with circular and pitched Pediments, a Window, a Portico, and an Arcade, with their Impoſts and Architraves, in each of the firſt 4 Orders; which immediately follow their reſpective

spective Entablatures ; and which having their principal Parts determined by their Measures affixed, needs no other Explanation. And in order to further enable him in the Art of Designing, I have shewn the proper Intercolumnations, or just Distances, that the Columns of every Order must be placed in from each other, when employed in Colonades, &c. by which he may form new Designs at his Pleasure. See Plates VI, XVII, XXXIV, XXXV, and LIII.

CHAP. VI. *Of Pediments, and the Manner of finding their Raking and returned Mouldings for their Cornices, and for Capping of their raking Mutules and Modillions.*

PEDIMENTS, which the *French* call *Frontons*, from the *Latin Frons*, the Forehead, are commonly placed over Windows, Doors, Portico's, &c. to carry off the Rains, and to enrich the Order on which they are placed.

PEDIMENTS are either entire or open ; and those are straight, circular, compound, &c.

AN entire straight Pediment is generally called a pitched Pediment, as the lower Pediment in Plate LXIX. And an entire circular Pediment is generally called a Compass Pediment, as the upper Pediment in Plate LXIX.

WHEN a Pediment consists of more than one Arch, as those in Plates LXXI, and LXXII, they are called entire compound Pediments.

OPEN Pediments are those, whose raking Members are stopt in some certain Place between the Points of their Spring, and their Fastigium or vertical Point ; as those in Plate LXIII, the lower Pediment in Plate LXXI, and the upper in Plate LXXIV.

ENTIRE Pediments are the first Kind that were made, and were originally placed to Portico's at the Entrances into Temples ; but now we place them to Frontispieces of Doors, Windows, &c. for Ornament and Use.

As the entire Pediment by its reclining Surfaces carries off and discharges the Rains at its Extreams, therefore none but entire Pediments

D   ments

ments fhould be employed abroad ; whilſt the broken or open are
employed for Ornament only within-ſide, where no Rains can come.

'T I s true we may daily ſee open Pediments placed without-ſide,
as is done by *Inigo Jones* at *Shaftſbury* Houſe in *Alderſgate-ſtreet*,
London. But, ſurely, nothing can be ſo abſurd, (unleſs it is the
placing of an entire Pediment within-ſide a Building, where no
Rains can fall ; as done by Mr. *Gibbs*, within the Church of St.
Mary le Strand) becauſe, by their being open, they receive the
Rains, and difcharge them in Front, as a ſtraight and level Cornice
doth ; and therefore of no more Uſe.

As Pediments, when well applied, are very great Enrichments to
Buildings, and in many Caſes are very uſeful, I have therefore given
14 Varieties for the young Student's Practice, with their Meaſures
affixed ; by which they may be drawn and worked of any Magnitude
required. *Vide* Plates LXIX, &c.

IN the Working of Pediments, the chief Difficulty is, to form the
Curves of the Raking and Returned Corniſes, that ſhall exactly ac-
cadeer, or meet at their Mitres ; which may be truly worked, as
following.

RULE. *To deſcribe the Curve of the Raking Cima recta of a
Pediment, having the Curve of the ſtraight or level Cornice given.*
Plate LXV.

LET *a b g* be the given *Cima recta* ; divide its Curve in 4 equal
Parts at the Points *d e f*, and draw the *Ordinates i f, k e*, and alſo
g d; from the Points *d e f*, draw the raking Lines *f q, e r, d x* ; and
the perpendicular Lines *d k, e l, f m*. In any Place, as at *n o*, draw
a right Line at right Angles to the Raking Lines ; and making the
Ordinates in Fig. B, as *w q, n r, t s*, equal to the Ordinates *i f, k e,
g d*, in Fig. A, thro' the Points *q r s*, trace the Curve *p q r s n* ;
which is the Curve of the Raking *Cima recta* required. And tho',
ſtrictly ſpeaking, each Half is a Part of an Ellipſis ; yet, if Centers be
found that ſhall deſcribe the Arch of a Circle to paſs through the
three Points *p q r*, and *r s n*, it will not be in the Power of the moſt
inquiſitive Eye to diſcover the Difference.

To defcribe the Curve of the Returned Cornice.

FROM *p*, Fig. C, fet back *p o*, the Projection *b g* in Fig. A, and draw the Perpendicular *o n*, on the Top of the Fillet *p o* ; make the Diftances *p t*, *t v*, *v w*, equal to the Diftances *b k*, *k l*, *l m*, in Fig. A ; and drawing the Lines *w x*, *v r*, *t g*, parallel to the Perpendicular *o n*, they will cut the Raking Lines in the Points *q r s x*. From the Point *p*, through the faid Points to *n*, trace the Curve *p q r s x*, which is the Curve of the Returned *Cima reƈta*, as required ; for its Ordinates at thofe Points are equal to the Ordinates in Fig. A.

By the fame Rule, the Curves of the Raking and Returned Ovolo's, Plate LXVI, the Raking and Returned Cavetto's, Plate LXVII, and the Raking and Returned *Cima reverfa* ; for the Capping of Raking Mutules and Modillions, Plate LXVIII, are found, as is evident to the firft View.

CHAP. VII. *Of Block and Cantaliver Cornices, Ruftick Quoins, Cornices and Coves, proportioned to Rooms of any Height, Angle-Brackets, Mouldings for Tabernacle-Frames, Pannels and Centering for Groins.*

I. OF Block Cornices I have given three Varieties in Plate LXXV; where I have firft fhewn them in fmall, to exprefs the Breadth of their Block-Truffes, and Diftances at which they are to ftand ; as likewife the Manner of applying them over Ruftick Quoins ; and fecondly, at large, the better to exprefs the Divifion of their Members.

II. IN Plate LXXIX, I have given an Example of a Cantaliver Cornice at large, which in lofty Rooms under a Cove, has a very grand and noble Effeƈt. The Breadth of a Cantaliver is one 4th of its Height, which is equal to the Height of the Freeze ; and the Diftance they are placed at, is the fame as their Height ; thereby making their Metops exaƈtly a geometrical Square, as in the *Dorick* Order.

III. COVES to Cielings are of various Heights ; as one third, one fourth, one fifth, one fixth, two fevenths, two ninths, &c. of the whole Height.　　　　　D $\frac{2}{3}$　　　　A COVE

A Cove of one third, as Fig. A, Plate LXXXI, is beft for a lofty Room; and when Windows are made therein, the Groins make a very agreeable Figure, and take off the feeming Heavinefs which an entire Cove of a large Height impofes on the Eye.

The Curve of this Cove *x h* is a Quadrant of a Circle defcribed on the Center *e*; as alfo is the Curve *a c* of the fame Radius defcribed on the Center *b*. To find the Center *b*, after having fet out the Diftances of the Columns at 9 Diameters and a Half, and defcribed the Cove *x h*, as aforefaid, make *d b* equal to *a d*.

A Cove of one fourth, as Fig. A, Plate LXXIX, is alfo fit for a lofty Room, as a Hall, Salon, &c. which is thus proportioned: Divide the Height in 20 Parts; give 5 to the Cove, and 2 to the Entablature.

To defcribe an Angle-Bracket for any Cove, fuppofe for Fig. B.

Let *a b c* be a Front-Bracket, and *a f* the Bafe over which the Angle-Bracket is to ftand. In C draw Ordinates from its Curve to its Bafe *a n*, at any Diftances, and continue them till they meet *a f* the Bafe of the Angle-Bracket, from whence raife Ordinates at right Angles to the faid Bafe; and making them refpectively equal to thofe in Figure C, through their Extreams trace the Curve *a n e*, which is one Quarter of an Ellipfis, and the Curve of the Angle-Bracket required.

A Cove of one 5th, as Fig. I, Plate LXXIX, is fit for a Room of State, and thus proportioned, *viz.* Divide the Height in 5; give 1 to the Cove, and one third of the next to the Cornice, which is *Dorick* without Mutules, and reprefented at large by Fig. H.

A Cove of one fixth, as the two Coves in Plate LXXX, is fit for Dining-Rooms, &c. and is thus proportioned. Divide the Height in 30 Parts; give 5 to the Cove, and 1 to the Cornice.

A Cove of two 7ths, as Fig. B, Plate LXXXI, is fit for a Study or Bed-chamber, and even for a Hall; as herein expreffed, and is thus proportioned: Divide the Height in 7; give 2 to the Cove, and 1 to the Entablature, which is *Dorick*.

IV. In

IV. In Plate LXXVI, I have shewn how to proportion the *Tuscan, Dorick, Ionick, &c.* Cornices to the Height of any Room ; a Work known, or at least practised but by few.

I. *To proportion the* Tuscan *Cornice to a Room of any Height.*

Divide the Height from the Floor or Dado, in 5, and the upper 1 in 5 ; of which give 3 to the Height of the Cornice, and 2 to the Breadth of its Stile and Height of its Rail, Fig. A.

II. *To proportion the* Dorick *Cornice to a Room of any Height,* Fig. B.

Divide the Height in 4, and the upper 1 in 10 ; of which give 3 to the Height of the Cornice, and 2 to the Breadth of its Stile and Height of it Rail.

III. *To proportion the* Ionick, Corinthian, *or* Composite *Cornices to the Height of any Room, Fig.* C.

Divide the Height in 3, and the upper 1 in 5 ; of which give the upper 1 to the Height of the Cornice, and 3 5ths of the next 1 to the Height of the Rail, and to the Breadth of the Stile.

V. In Plate LXXVII, I have given eight different Mouldings for Pannels ; and in Plate LXXVIII, four different Mouldings for Tabernacle-Frames, with proper Enrichments, and their Measures affixed ; by which they may be drawn and worked, of any Magnitude required.

VI. In Plate LXXXII, I have shewn the Manner of finding the Curves of the necessary Ribs for Groins, by one general Rule, as follows.

In Fig. A, let *a b c d* be the Plan, and the Semi-circle *a c b* an End Rib, and *c f* its Height. Draw the Diagonal *a d*, as also the Ordinates 1 2 3 4, on the Semi-circle Rib, which continue till they meet the Diagonal, in the Points 5 6 7 8 ; from whence raise right Lines perpendicular to *a d*, respectively equal to the Ordinates 1 2 3 4 ; and then tracing the Curve thro' their Extreams, it will be the Curve for the Diagonal Rib, as required.

By the same Rule, the Ribs for all other Kinds of regular or irregular Groins are found, be their Plans what they will, and their

Arches

Arches femi-circular, femi-elliptical, or Scheme ; as is evident by Figures B C D E and F ; which a little Infpection will make evident to the meaneſt Capacity.

C H A P. VIII. *Of Truſſed Partitions, Truſſed Girders, Naked Flooring,* &c.

I. IN Plate LXXXIII, are three Varieties of Truſſed Partitions, of 40, 50, and 60 Feet Bearing, for Graineries, Warehouſes, &c. wherein great Weights are laid ; of which the middle one is for two Stories Height.

II. In Plate LXXXIV, the Figures A B C repreſent three Varieties of Truſſed Girders ; which ought not to exceed 25 or 30 Feet in Length ; and Figure D is a Girder cut Camber, which, for Lengths from 15 to 20 Feet, will do without being truſſed, as the preceding.

The Scantlings of Girders ſhould be

	Feet.		Feet.		Inches.		
	12		15		10		8
	15		18		11		9
Lengths from	18	to	21	to be	12	by	10
	21		24		13		11
	24		27		14		12
	27		30		15		13

NOTE, That Girders ſhould have at leaſt 9 Inches Bearing in the Walls, and be bedded on Lintels, laid in Loam, with Arches turned over their Ends, that they may be renewed at any Time without Damage to the Pier.

III. In the upper Part of this Plate, I have ſhewn three Bays of Joiſts, or naked Flooring ; wherein the two outer ones have only their binding Joints expreſſed ; and that in the Middle with their Bridging Joiſts, (or Furring Joiſts) as called by ſome. In this Kind of Flooring 'tis to be noted, that binding Joiſts are ſo framed as that their

their under Surface be level with the under Surface of the Girder, and the upper Surface of their Bridgings with the upper Surface of the Girder.

THE Diſtance of binding Joiſts ſhould not exceed 3 Feet and a half, or 4 Feet, in the Clear; and their Scantlings ſhould be as follows, *viz.*

<table>
<tr><td></td><td>Feet.</td><td></td><td>Inches.</td><td></td></tr>
<tr><td>If their</td><td>⎧ 8 ⎫</td><td>their Scantling</td><td>⎧ 6 ⎫</td><td>⎧ 5 ⎫</td></tr>
<tr><td>Length be</td><td>⎨ 10 ⎬</td><td>ſhould be</td><td>⎨ 7 ⎬ by</td><td>⎨ 5 ⎬ Inches.</td></tr>
<tr><td></td><td>⎩ 12 ⎭</td><td></td><td>⎩ 8 ⎭</td><td>⎩ 5 ⎭</td></tr>
</table>

BRIDGING Joiſts ſhould be laid at 1 Foot in the Clear, and their Scantlings ſhould be 3 by 4, 3 and a half by 4, or 4 by 4, *&c.*

IN common Flooring, where neither Binding or Bridging Joiſts are uſed, the Scantlings of Joiſts ought to be as follows, *viz.*

<table>
<tr><td></td><td>Feet.</td><td></td><td></td><td></td></tr>
<tr><td></td><td>⎧ 10 ⎫</td><td></td><td>⎧ 7 ⎫</td><td>⎧ 3 ⎫</td></tr>
<tr><td>If the Length be</td><td>⎨ 11 ⎬</td><td>their Scantling to be</td><td>⎨ 8 ⎬ by</td><td>⎨ 3 ⎬</td></tr>
<tr><td></td><td>⎩ 12 ⎭</td><td></td><td>⎩ 9 ⎭</td><td>⎩ 3 ⎭</td></tr>
</table>

NOTE, No Joiſts to exceed 12 Feet in Length; to have at leaſt ſix Inches Bearing, and that on a Lintel or Bond Timber; and their Diſtance in the Clear not to exceed one Foot. 'Tis alſo to be obſerved, that all Joiſts on the Breaſts and Backs of Chimneys be framed into Trimming Joiſts (whoſe Scantlings are to be the ſame as thoſe of Binding Joiſts) at 6 or 8 Inches Diſtance behind, and 12, 16, *&c.* Inches before, as *a a.*

CHAP. IX. *Of Roofs.*

THE Requiſites to Roofing, is the Scarfing and Completing of Raiſings, or Wall-Plates, *&c.* to determine the neceſſary Height of the Pitch, agreeable to the Covering; to find the Lengths of Principal and Hip-Rafters, and to back them when neceſſary;

to contrive the proper Truffes for to ftrengthen the principal Rafters;
and to lay out in Ledgement the feveral Skirts; thereby to deter-
mine the Quantity of Materials neceffary; and to find the feveral
Angles and Lengths of all Parts; fo as to fet out Work, and fix, at
once, the Whole in a Workman-like Manner, and in the leaft
Time.

Now, in order to make the young Student a Mafter herein, I
have fhewn,

I. In Plate LXXXV, by Figures C D E F G H I K L M ten
different Manner of Scarfing together the Raifings of Roofs; which
is the firft Work to be done; and then the Beams being cogged
down thereon at their proper Diftances, which fhould never exceed
10 Feet in the Clear, we may begin to confider, and work the
Superftructure to be raifed thereon.

The firft Thing to be confidered is the Height of the Pitch,
which muft be determined according to the Covering; which, if
with plain Tile or Slate, the true Pitch, as Fig. A, will be proper:
But if with Pan-tiles or Lead, it may be much lower. But here,
for Example's Sake, we will fuppofe a Roof to be true Pitch, whofe
Plan is *r v t h*, Fig. B. and whofe Breadth we will fuppofe is equal
to *g* 4, Fig. A.

To find the Length of a principal Rafter.

Divide *g* 4, in 4 Parts; on *g* and 4, with the Radius of 3 Parts,
make the Section *h*; then draw the Lines *g h*, and *h* 4; and each
is the Length of a principal Rafter required.

To find the Length of the Hip-Rafters.

Draw the Central Line *o a*, and the Diagonals or Bafes, over
which the Hip-Rafters are to ftand; as *r a*, *t a*, *a v*, and *a b*; make
a t, *a h*, and *a r*, in Fig. A, equal to *a t*, *a h*, and *a r*, in Fig. B,
and draw the Lines *h t*, *h h*, and *h r*; then *h r* is the Length of
the Hip-Rafter *r p*; *h h* is the Length of the Hip *g h*; and *q v* and
h t is the Length of the Hip *t s*.

Or otherwife, on the End of the Diagonal *r a*, raife the Perpen-
dicular *a q* equal in Height to *h a* in Fig. A, and draw the Line *r p*,
which

which is the Length of that Hip, and equal to *h r*, in Fig. A, as before.   By the same Rule you may find the Lengths of all the other three Hips.

To find the Angle of the Back of any Hip-Rafter.

THROUGH any Point of its Base, as *c* in Fig. B, draw a right Line at right Angles, as *f b*, cutting the Out-lines of the Plan in *f* and *b*.   From the Point *c*, let fall a Perpendicular, as *c d*, on the Hip *g h*; and make *c e* equal to *c d*.   Draw the Lines *f e*, and *b e*, and the Angle *b e f*, is the Angle of the Back required.

To lay out a Roof in Ledgement.   Plate LXXXVI.

LET *b i d c*, be a given Plan; *a h*, Fig. B, the given Pitch; and *h g*, *h e*, a Pair of principal Rafters agreeable thereto.

BY the preceding, draw the Ridge-Line *a a*, and the Diagonals *a d*, *a c*, and *a b*, *a i*.   In Fig. B, make *a c*, *a d*, and *a b*, equal to the Diagonals *a d*, *a c*, and *a b*, *a i*, in Fig. A.   Through the Points *a a*, in Fig. A, draw the two Beams *q k*, and *e 4*.   Make *r q*, *f e*, and *k l*, *4 m*, each equal to the Length of a principal Rafter, as *h g*, Fig. B; and draw the Lines *d s*, *s r*, *r b*, and *i l*, *l m*, *m c*.   On the Points B and *i*, in Fig. A, with the Radius *h b* (the Length of the Hip) make the Section *t*, and draw the Lines *b t* and *t i*.

ON the Point *d*, in Figure B, with the Length *h d* in Fig. B, and on *c* with the Length *h c*, make the Section *o*; then drawing the Lines *d o* and *c o*; the Skirts of the whole Roof are laid; which fill up with small and Jack Rafters at Pleasure.

NOW when the Skirts of a Roof are thus drawn on Paper, and are cut out round at their Extreams, and be truly bended or turned up on the Out-Lines of the Raising, as *b i*, *b d*, *d c*, and *c i*; they will all come truly together, and become a Model of the Roof required, wherein every Rafter may be expressed in its Place, and the just Lengths and Quantity known to a very great Exactness.

BY the same Rule, the irregular Roof, Pl. LXXXVII, is laid out in Ledgement, and its Requisites found, as is evident at the first View.

E   NOTE,

NOTE, As this Plan hath not parallel Sides, every Pair of Rafters will therefore be of different Lengths, although the Height of their Pitch is the same ; and so consequently every Rafter muſt be backed by taking away a Triangle, as *a e b*, Fig. D, and then the Sole of the Foot of a Rafter will be as *c a d b*.

THE following Plates conſiſting wholly of Truſſes for Roofs and Domes, need no Explanation more than their own Figures expreſs, to which I refer.

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NOTE, As this Plan hath not parallel Sides, every Pair of Rafters will therefore be of different Lengths, although the Height of their Pitch is the fame ; and fo confequently every Rafter muft be backed by taking away a Triangle, as *a e b*, Fig. D, and then the Sole of the Foot of a Rafter will be as *c a d b*.

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Pl. 1.

Tho. Langley scalp.

Regula

A Plattband

Cima reversa

6
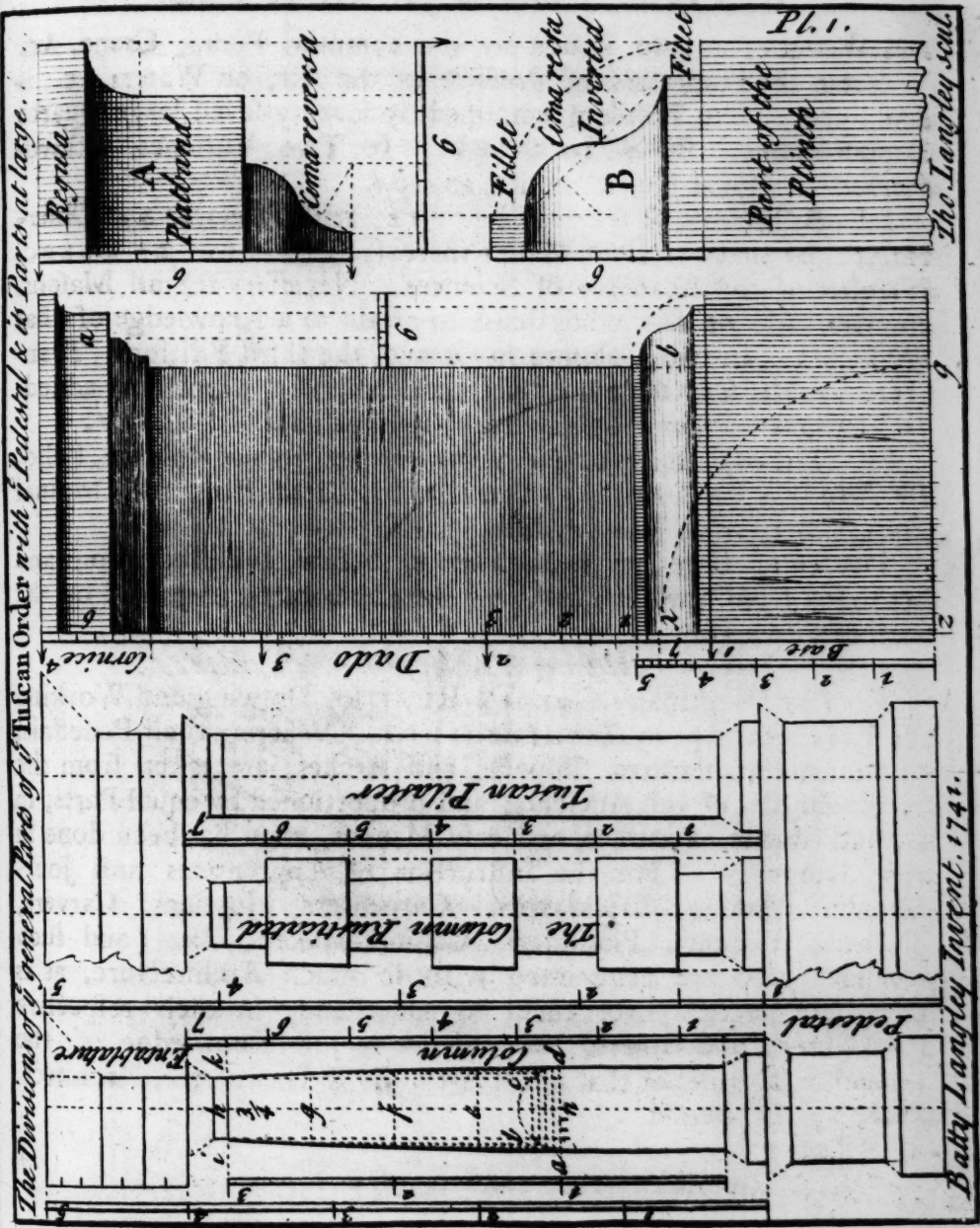
Fillet

Cima recta Inverted

Fillet

B

Fillet

Part of the Plinth

6   9

a   b

6

Cornice   9

Dado   3   a

Base

5 4 3 2 1

The Divisions of ỹ general Parts of ỹ Tuscan Order with ỹ Pedestal & its Parts at large.

Tuscan Pilaster

7 6 5 4 3 2 1

The Column Rusticated

5   4   3   2   1

Entablature   Column   Pedestal

7 6 5 4 3 2 1

Batty Langley Invent. 1741.

Pl. II.

3　　　　6　　　　　8　　　　3

Fillet
Fascia
Ovolo
Fillet
Frize
Collerino
Fillet

Abacus

Tuscan Capital.

Astragal

To a Semi-Column　　*To a Semi-Pilaster*

Centeral Line

3　4　　1　2　3　4　Apophyges

Cincture

Torus

Tuscan Base.

Plinth

1　　2　　3

Regula

Cima
Recta

Fillet

Corona

Ovolo

Fillet
Cavetto

Cornice

Frize

Frize

6   1   2   3

Tenia

Upper
Fascia

Lower
Fascia

Architrave

Cimatium

Bed. Mould

Line of a Column

Line of a Pilaster

The Centered

The Centered

7
6
5
4
3
2
7
1

Batty Langley Invent. 1741.   T. L. Sculp.

Tuscan Doors   Plate 4.

Diameters

9
9
8
7
6
5
4
3
2
1

½ ₁D. ½   Brick   ½ ₁D. ½

6 Diam.

Plate 5.

Tuscan Window.

B.L. Invent 1741.

T.L. Sculp.

Pl. 6.

Tuscan Intercolumnations for Portico's, Colonades &c.

4 Diam.

3 Diam.

1 D.

5 Diameters

4 Diam.

2 D.

Pl. 7.

Tho. Langley sc

Tuscan

Portico

4

3½

3½

4

↑

↑

↓ Diameters ↓ 5 Diameters ↓

↓ D. ¾ ↓ 4 Diameters ↓

B. Langley Inv.ʳ 1741

Tuscan Arches with their Imposts and Architraves.

Tuscan Arches with their Imposts and Architraves.

Pl. 8

1 Dia.

11 Parts

4 Diameters

5 Diameters

1.D. ½

1.D. ⅝

B. Langley Invt. 1741. T.L. Sculp

Pl. 9.

Arcades

Tuscan

Tuscan

Arcades

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

$1 D$

$1 D$

$1 D \frac{3}{4}$

5 Diam. $\frac{1}{2}$

5 Diam. $\frac{1}{2}$

$1 D \frac{3}{4}$

T. I. Sculp.

B. Langley Inv. 1741.

The Divisions of ye general Parts of ye Dorick Order, with ye Pedestals; its Parts at large.

The Divisions of ye general Parts of ye Dorick Order, with ye Pedestals: its Parts at large

Ovolo
Fillet
Cavetto

A

Cavetto

B

Plinto

Rusticated Column

Dorick Column

Dorick Pilaster

Pedestal

Intablature

Column

Pedestal

I. I. Sculp.

Batty Langley Invent. 1741.

Pl. 11

4   5

Astragal   Annulets

Dorick Capitale

1 2 3 4   1 2 3 4

29 Parts

a   To a Semi-Column   3 6 6 6 6 8

b

c   Ton Semi-Pilaster   a

A   c   b
                                                         B
                                                         d

Dorick   Bases

a

Astragal   Upper Torus   3

Torus   Scotia   b   6

Lower Torus   4   2

Plinth   Plinth

1 2 3   1 2 3 4

Pl. 12

The Dorick Entablature

The Planceer of a Mutule

The Central line of a Column

Batty Langley Invent. 1741.

T. L. Sculp.

The many uses of setting out & dividing u Triangular &c Metares in u Davick Friar
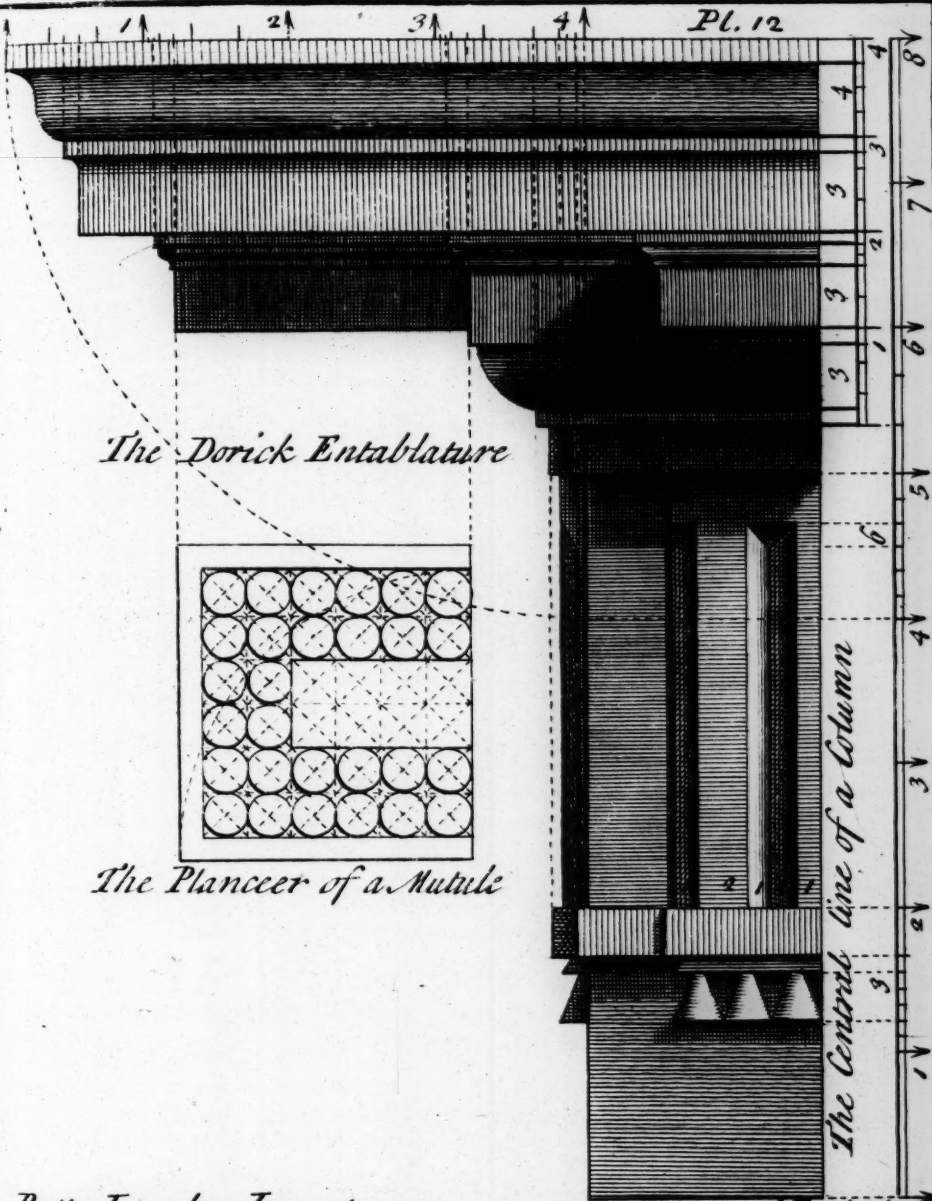
The manner of setting out & dividing ye Triglyphs & Metopes in ye Dorick Frize

Pl. 13.

T. I. Sculp.

Taenia

Metope

Triglyph

Semi channell
Interstice
Channell
Interstice
Channell
Interstice
Semi channell

Taenia

Reglet

Guttæs or Drops

6 Parts

45 Min.

12 Parts

30 Min.

Batty Langley Invent 1741.

Pl. 14.
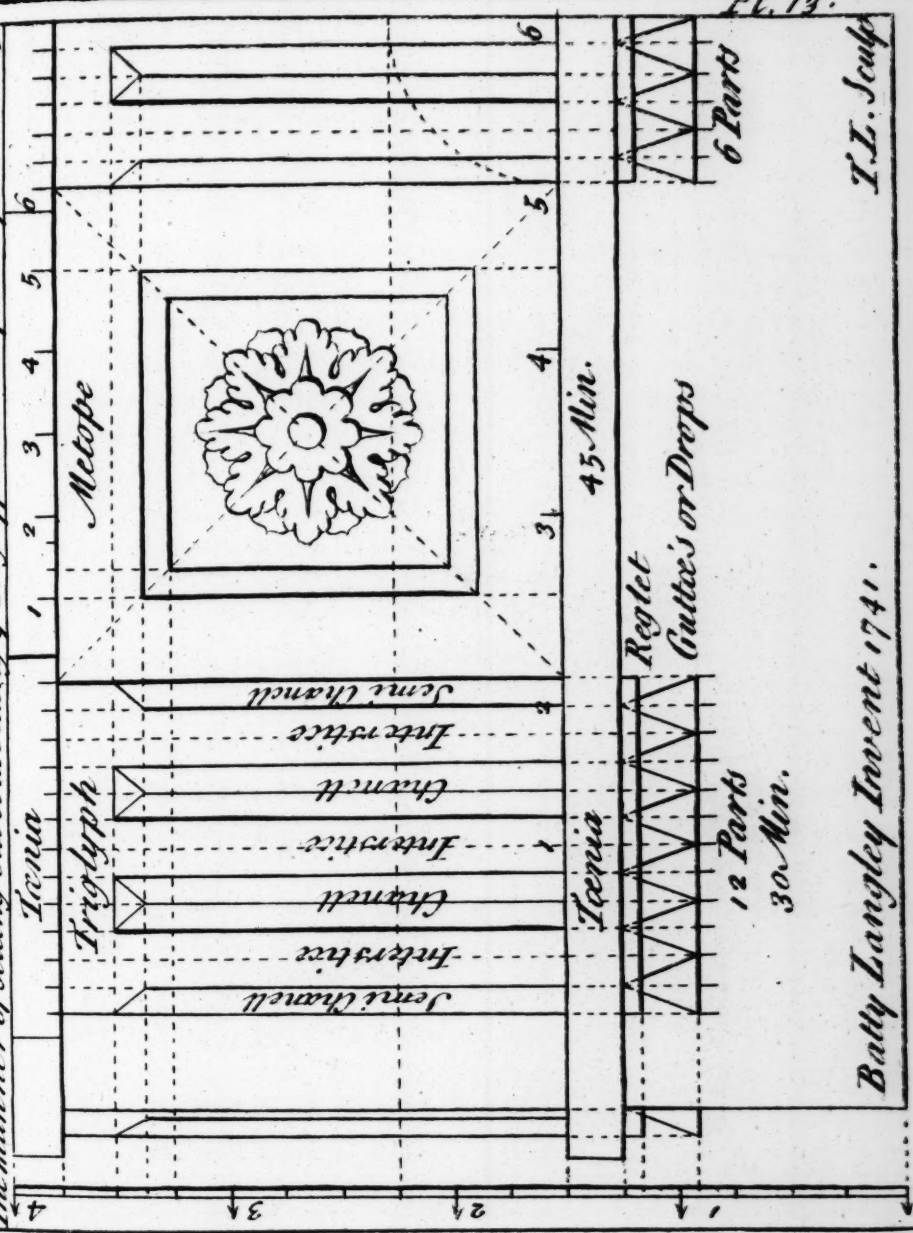
Mutule   ½ Mutule

The Planceer of the Dorick
Cornice, at an external
Angle.   Vide Plate XII.

Coffer

B.L.Inv.t 1741.   T.L.Sculp

11 Parts

12
11
10
9
8
7
6
5
4
3
2
1

$\frac{3}{8}$ 1 D. $\frac{3}{8}$ 6 Diam $\frac{1}{4}$ 6 Diam $\frac{1}{8}$ $\frac{1}{2}$ 1 D. $\frac{1}{2}$
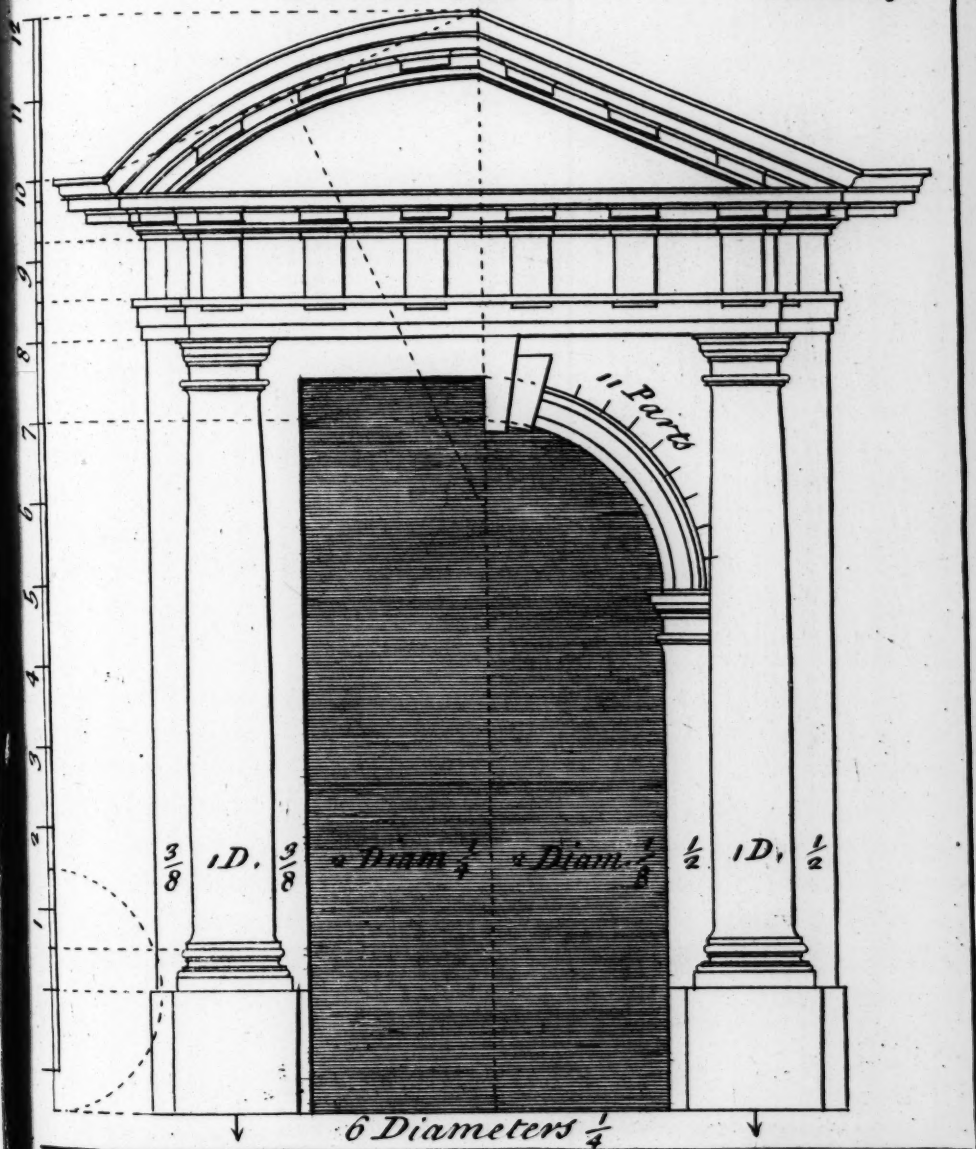
6 Diameters $\frac{1}{4}$

B. L. Invent 1741.   T. L. Sculp.

Dorick Window.

Plate 16.
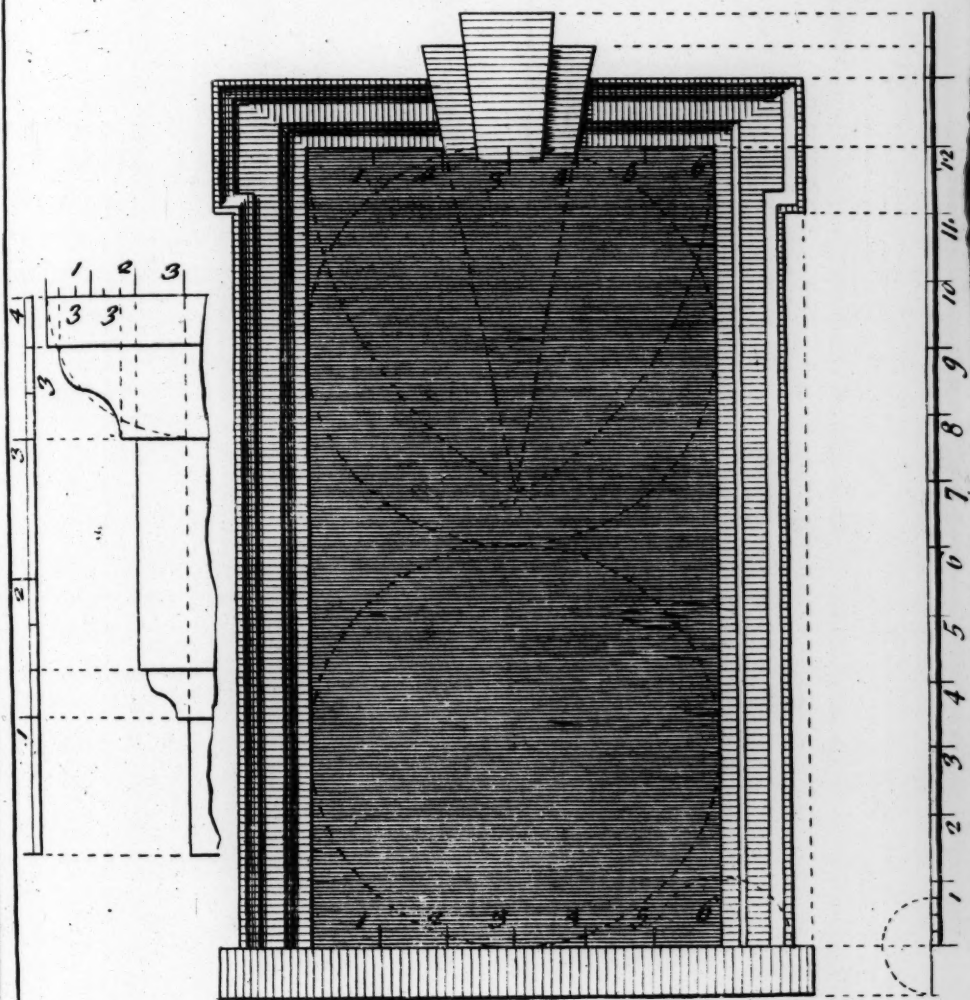
B. L. Invent 1741.

T. L. Sculp.

Pl. 17.

Dorick Intercolumnations for Porticos Colonades &c.

4 Diameters

2 Dia. ¾

1 D. ½

30 45 30 45 30 45 30 45 30
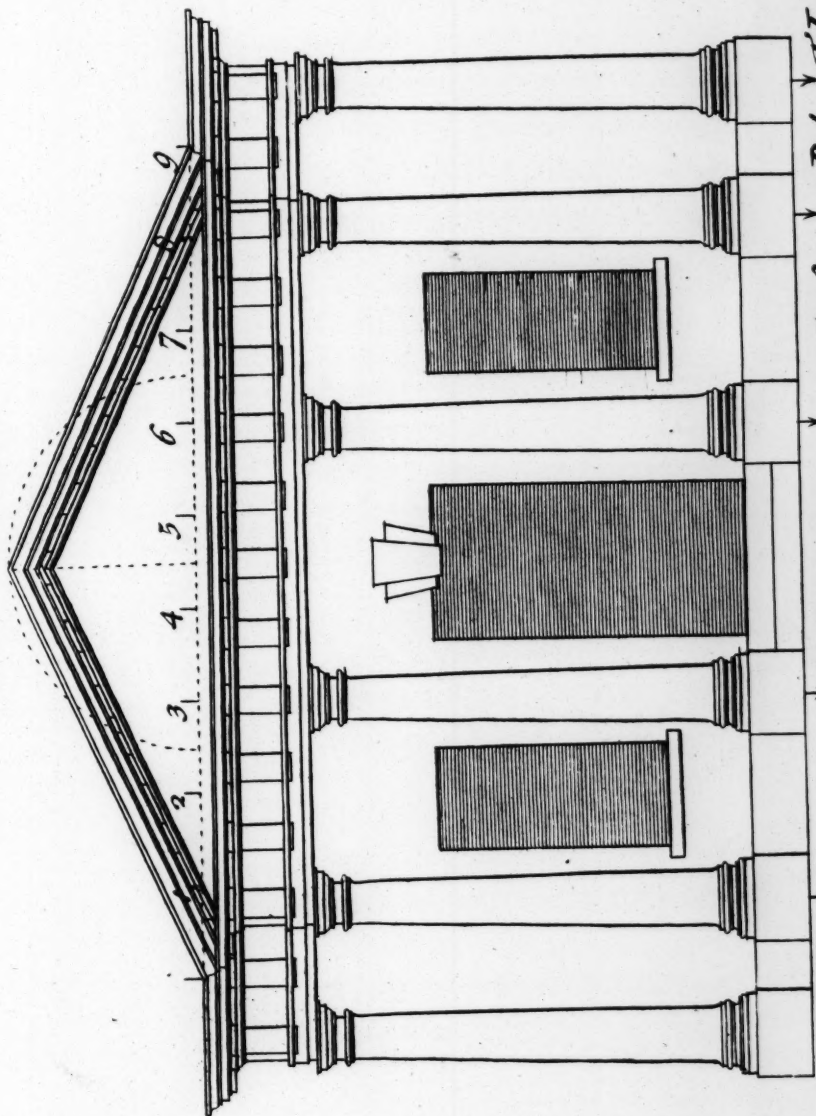
5 Diameters

3 D. ¾

2 D. ½

B.L. Invent 1741.

T.L. Sculp.

Pl. 18.

Dorick Portico.

B. Langley Invent 1741.   3 Diameters   3 D. ¾   1 D. ½   T. I. Sculp

Pl. 19.

Dorick Arches, with their Imposts & Architraves.

B. Langley Inv.t 1741. T.L. Sculp.

4 Diam. ¼

1 D.

½
½

1 Diam.

11 Parts

30 45 30

30

C

D

B

A

B. Min.

9 Parts

45 30 45

2 Diam.

30

a
b

2/3

1 D. ⅙

B. Min.

Dorick Arcade's.

Dorick Arcade's.

Pl. 20.

I. L. Sculp.

6 Diam. ¼

6 Diam. ¼

½

½

II Part. D.

↓ 2 D. ½ ↑

↓ 2 D. ½ ↑

↓ 2 D. ½ ↑
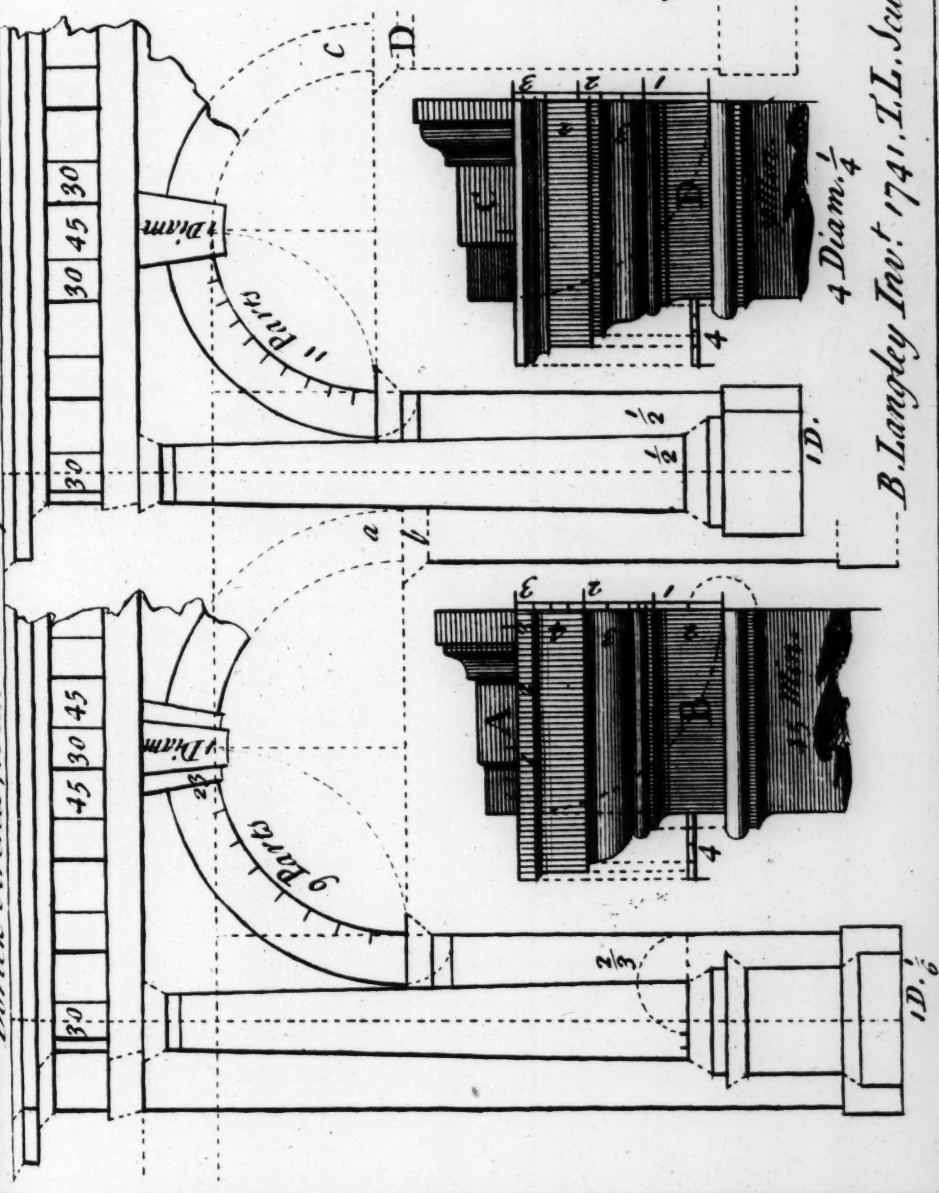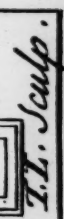
B. Langley Invent 1741.

The Divisions of the several Parts of the Tonick Order with the Pedestal & its Parts at large.

Pl. 21.

I.I. Sculp.

The Divisions of General Parts of ye Ionick Order wth ye Pedestal & its Parts at large.

A

B

Ionick Pilaster

Ionick Column Illustrated

Diameters

B. Langley Invent. 1741.

The entire Height, a Semi Diameter

B.
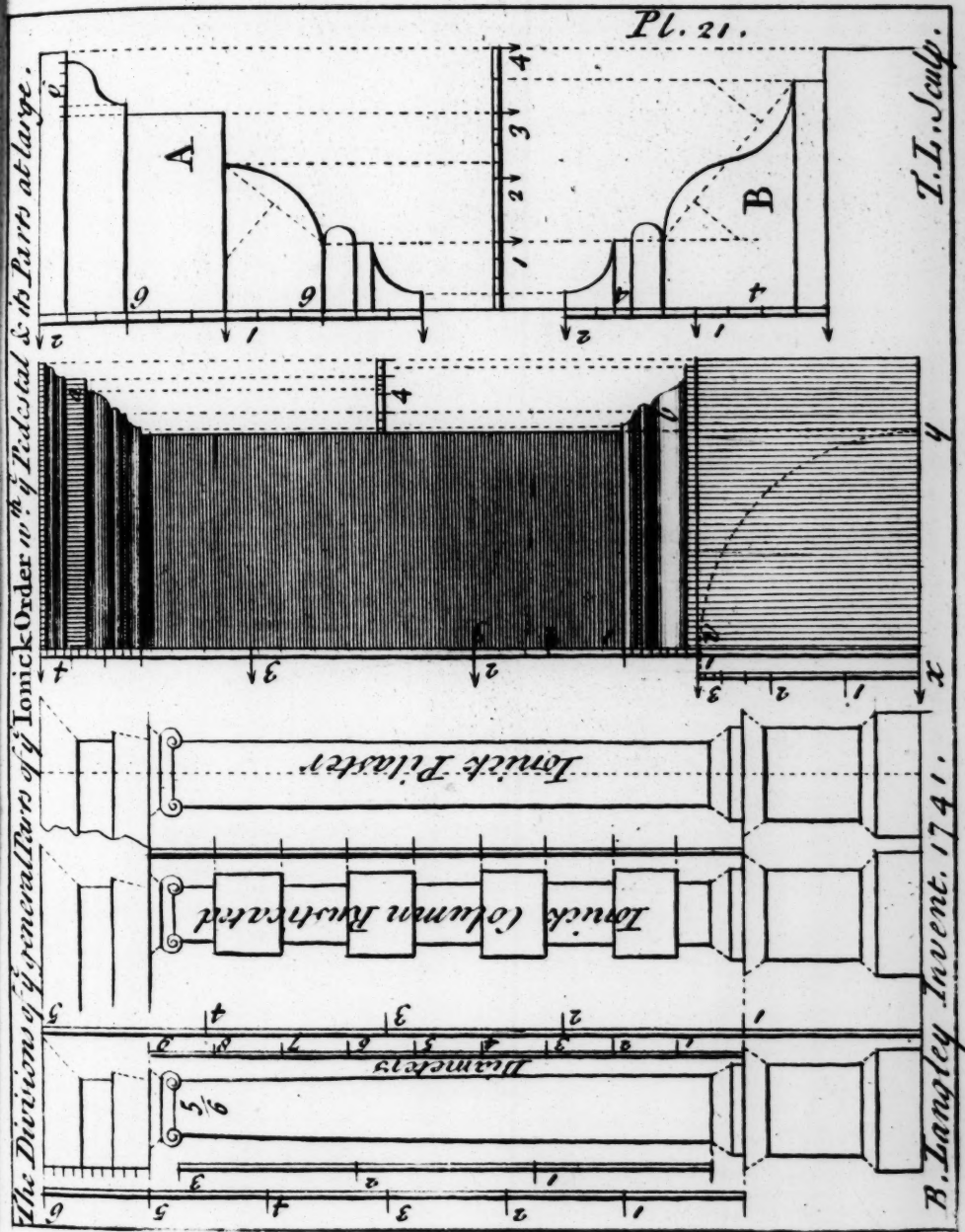
The entire Height, a Semi Diameter.

The Eye of
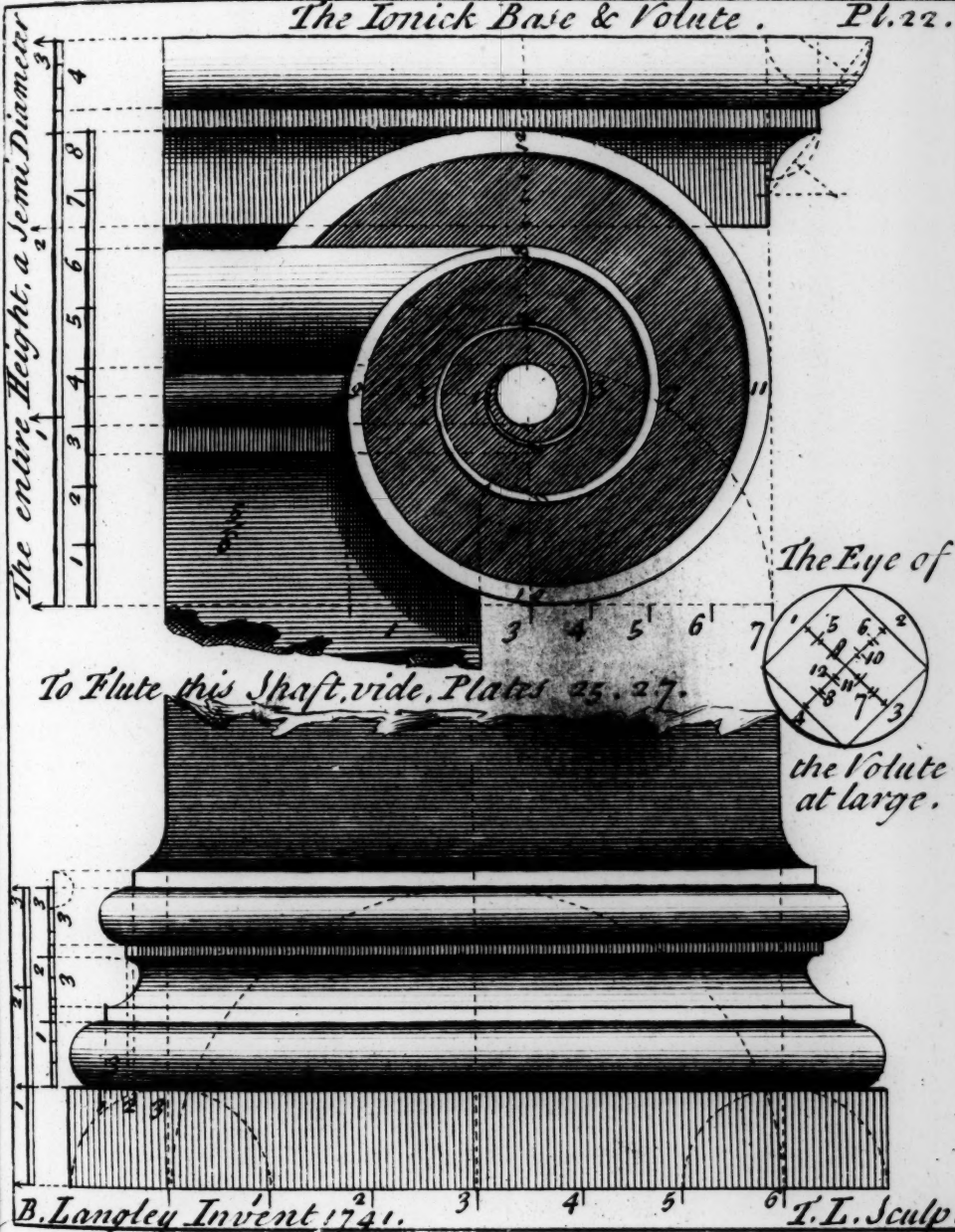
the Volute
at large.

To Flute this Shaft, vide, Plates 25. 27.
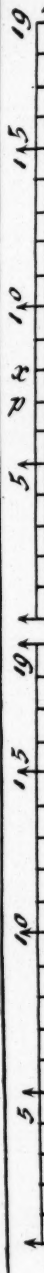
B. Langley Invent 1741.   T. L. Sculp.

Minutes.

15 10   10   20   30   40   50   60   10 15

Diameter

1   2   3   4   5   6
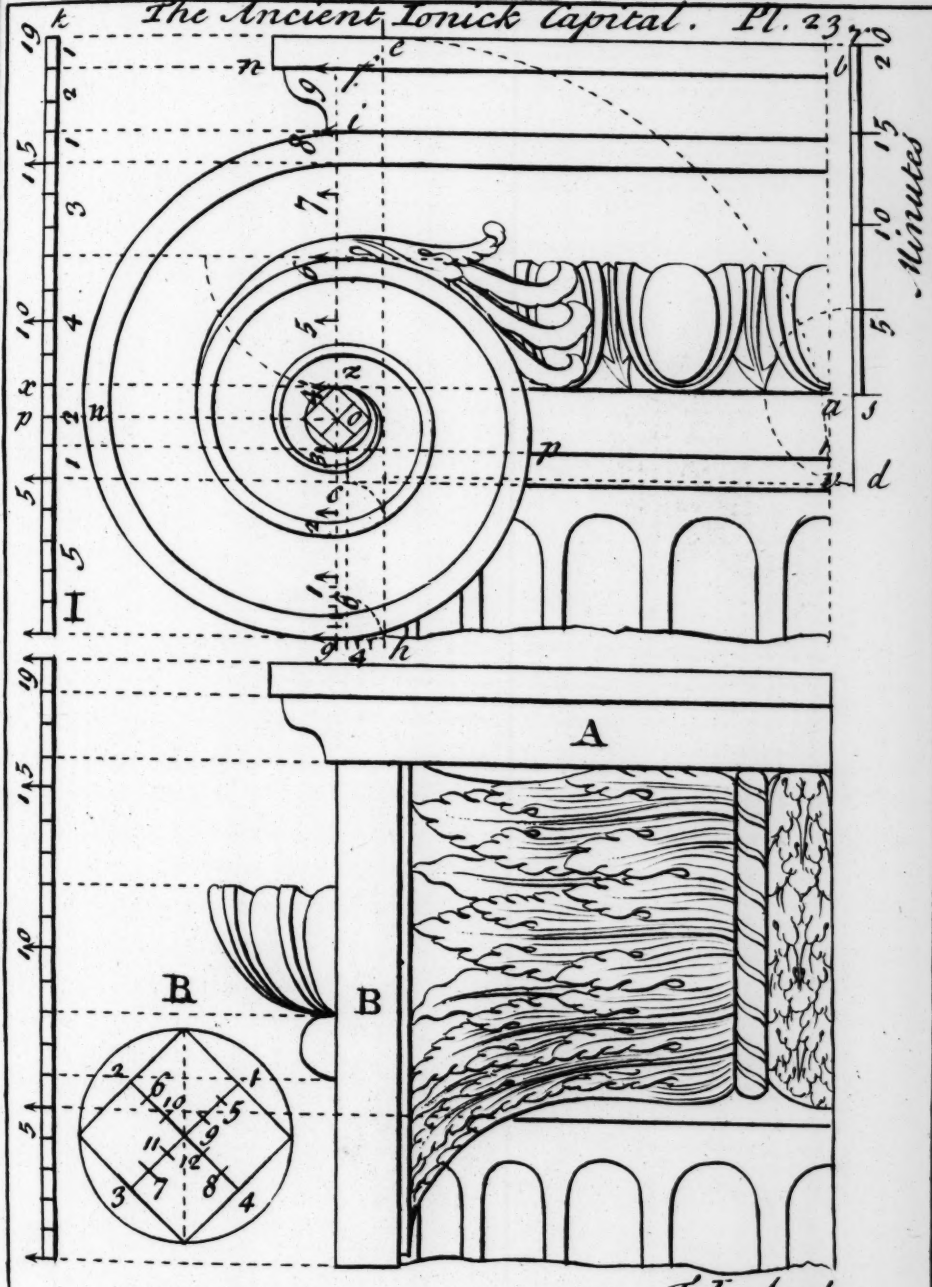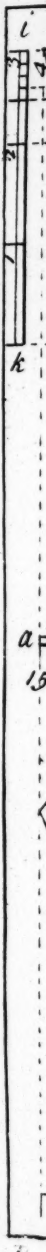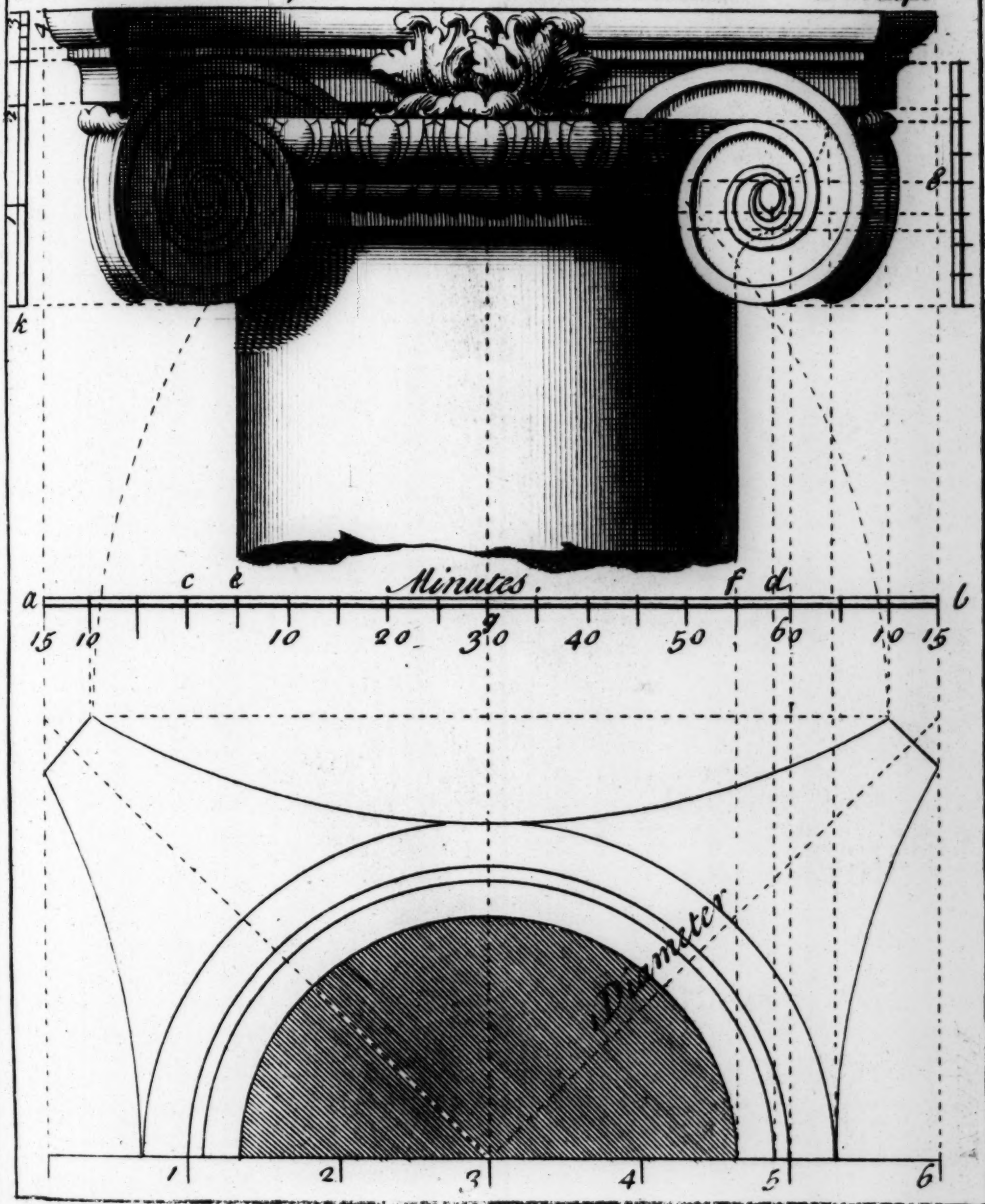
Langley Invent. 1741   *Tho: L. Sculp.*

The manner of Fluting Ionick & Corinthian Columns.

Pl. 25.

The manner of Fluting Ionick & Corinthian Columns.

B. Langley Invent 1741.

T.I. Sculp.

The
on

e

c

a
Do
&
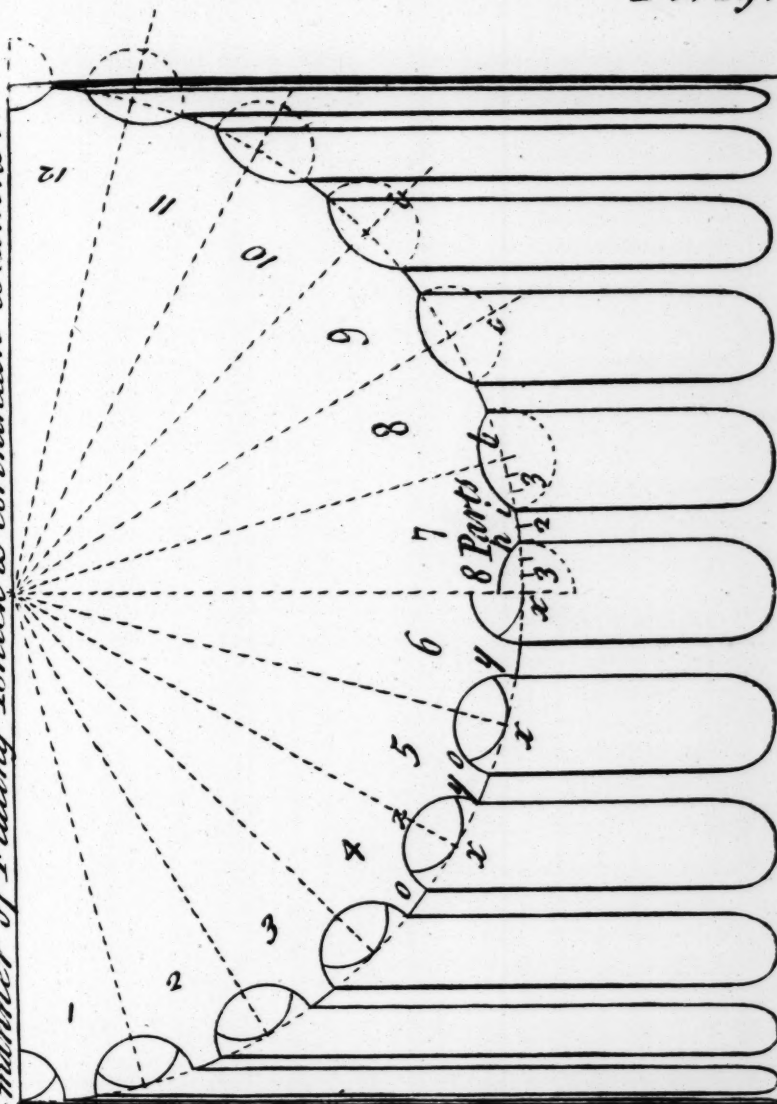
The manner of transferring the Flutes & Fillets
on the Shaft of a Column —   Plate 26.

f

The Girt of the Shaft at its Base.

d

The Girt of the Shaft at its Astragal.

e

c

a 3 3 3   b
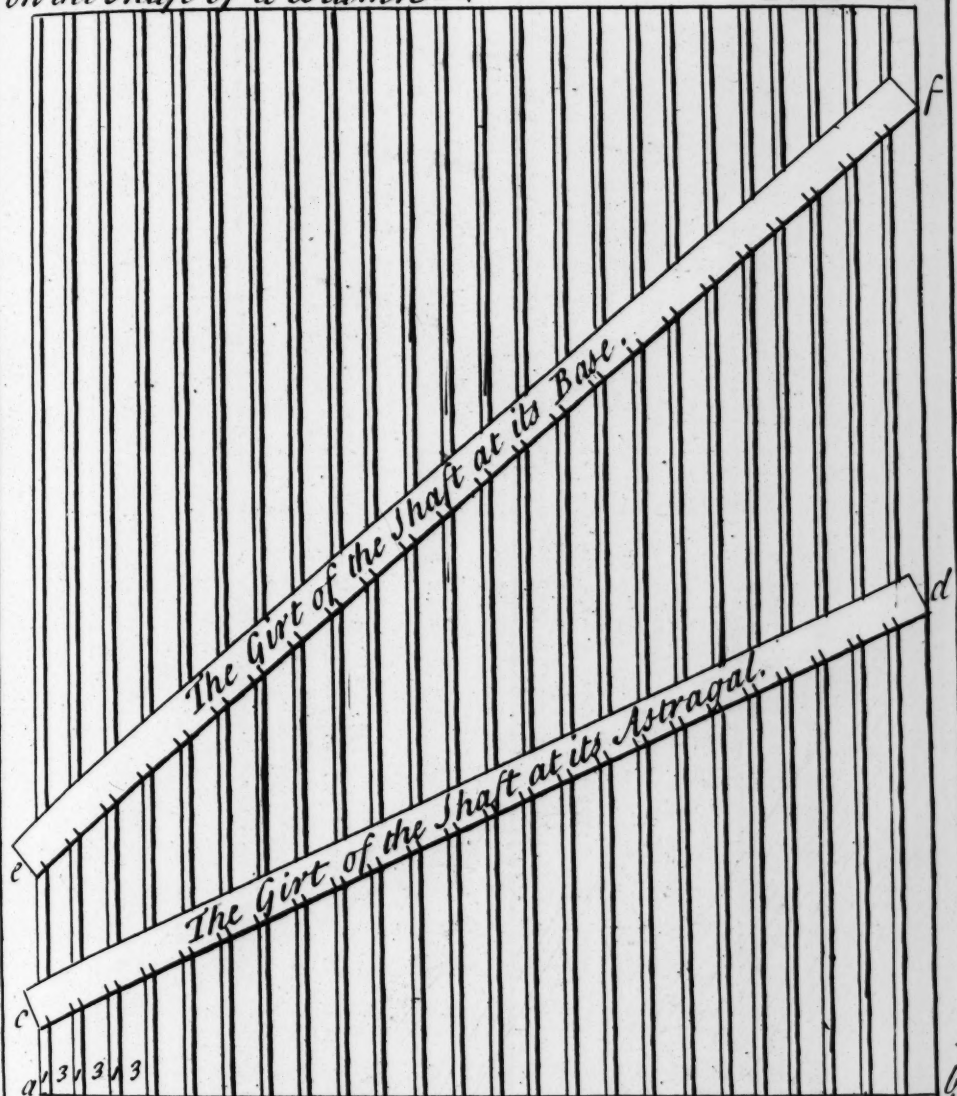
Divide a given length, less than y Circumference in 24 p.ts
& each part in 4 then 1 is a Fillet, & 3 is a Flute —

A

3 1 3 1 3 1 3 1

29 Parts

c

3 1 3 1 3 1 3 1 1

d   e

a   b

31 Parts

10 Parts
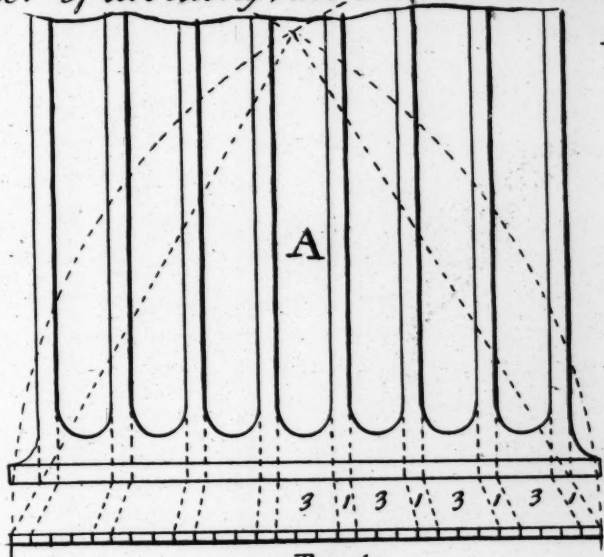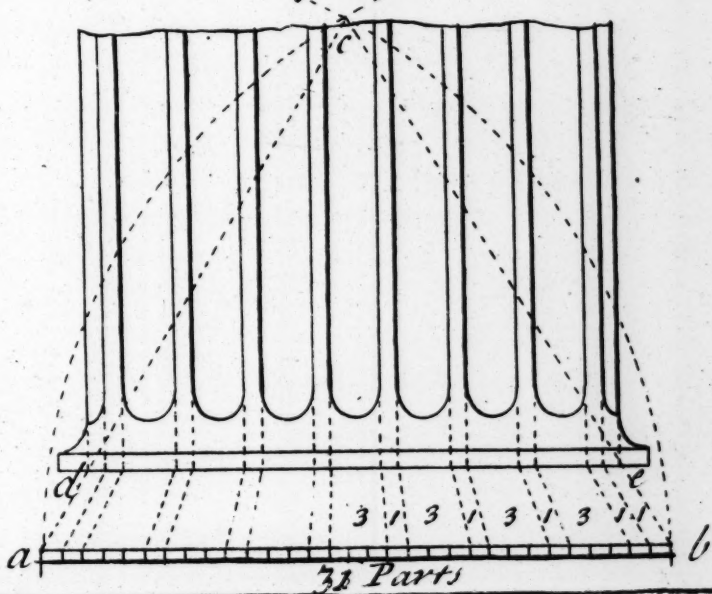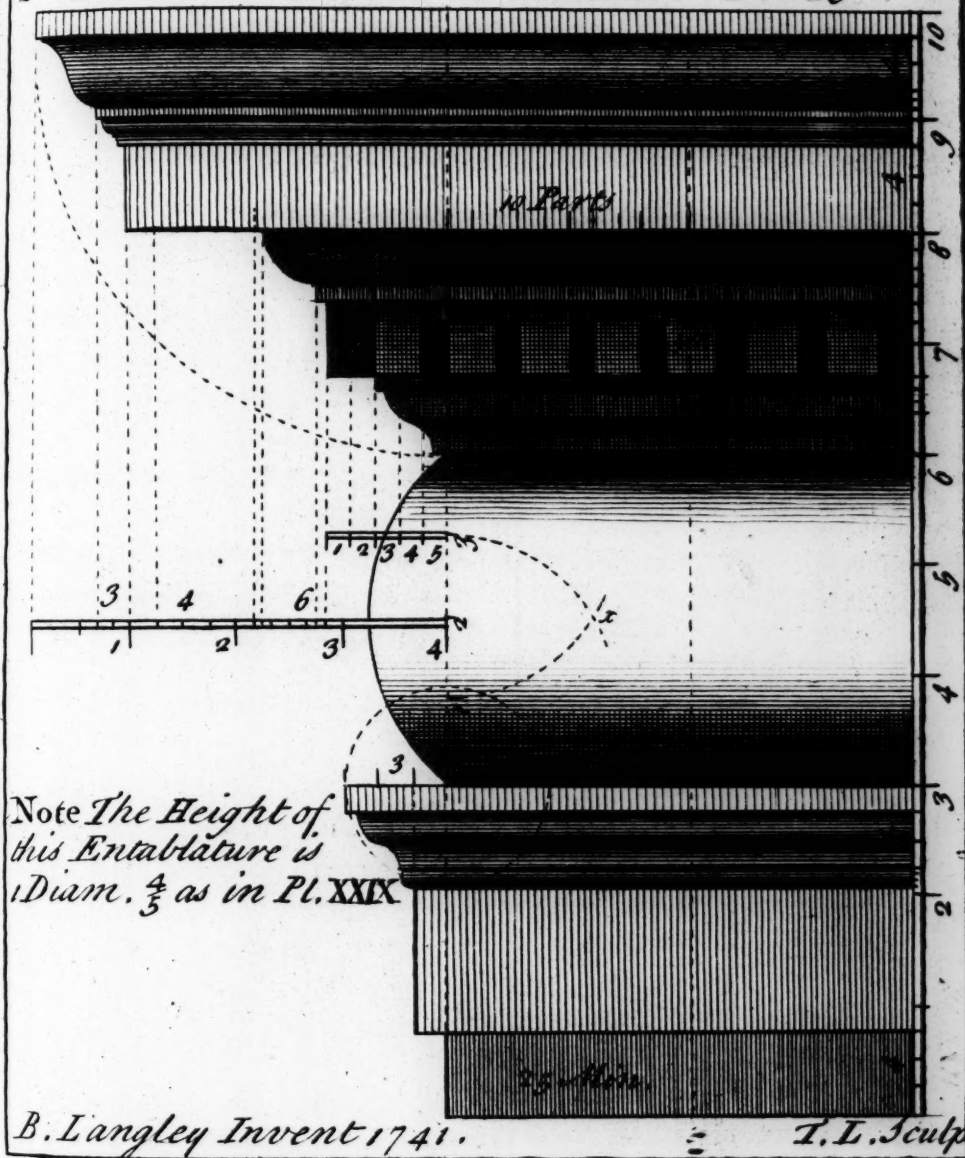
Note *The Height of this Entablature is 1 Diam. $\frac{4}{5}$ as in Pl.* **XXIX**

B. Langley Invent 1741.

I. L. Sculp

½ Diam.

4

B

1   2   3   4

9'

3

A Modilion at large

1   2   3   4   5   6

A

Note. *Five ninths of ẙ Entablatures Height as B A. is equal to the Diam. of ẙ Column.*   B L Invent 1741. T L Scul
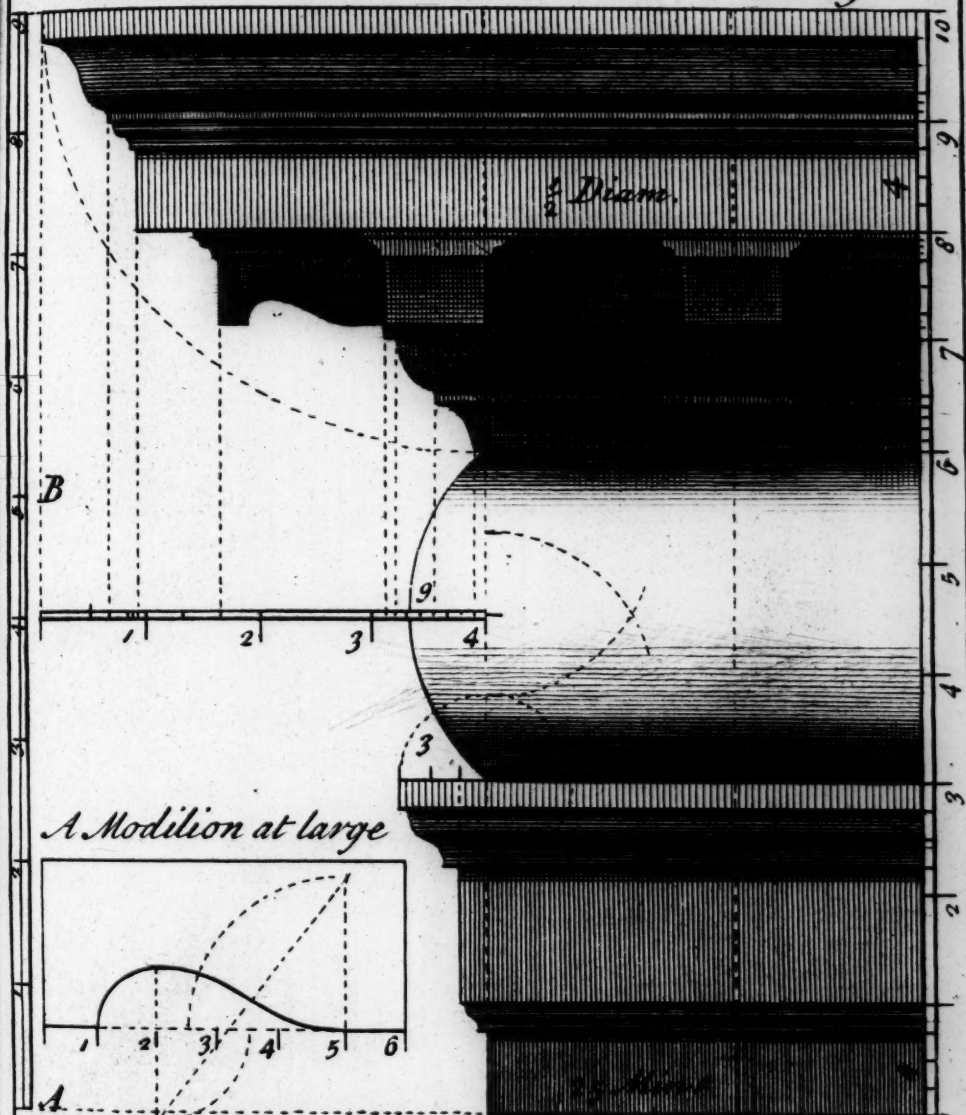
Plate 30.

Ionick Modilion at large.
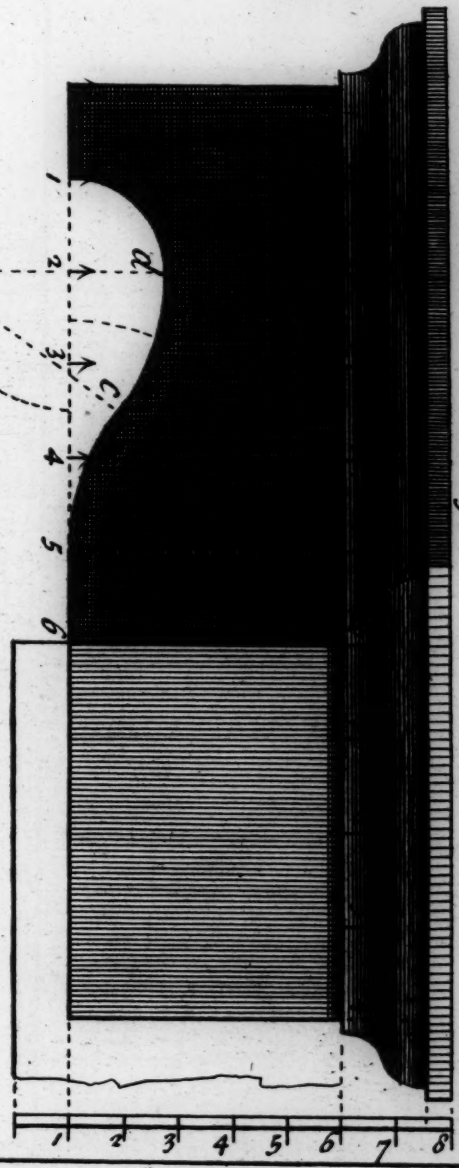
Ionick Dentules at large.

5

1
2
3
4
5
6

a
c
b

1 2 3 4 5 6 7 8

8 parts

Plate 31.

9
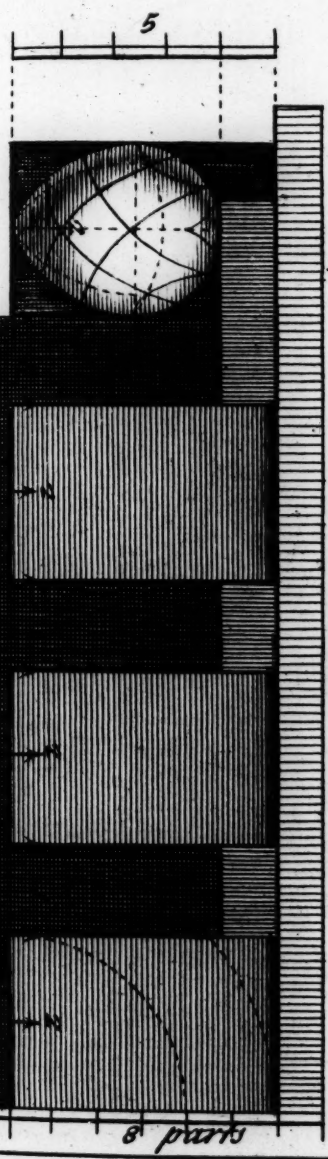
The Planceer of the Ionick
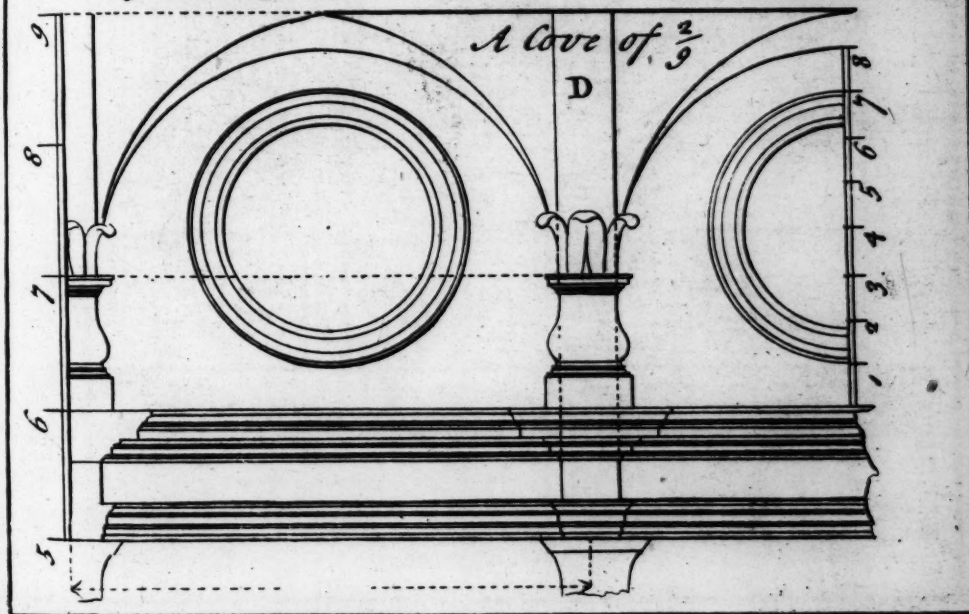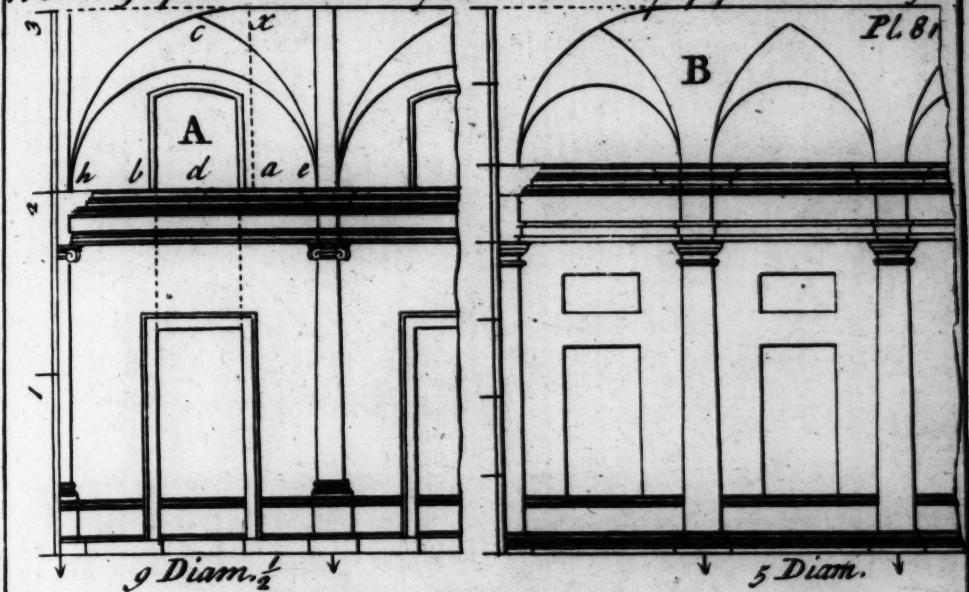Entablature at an External Angle
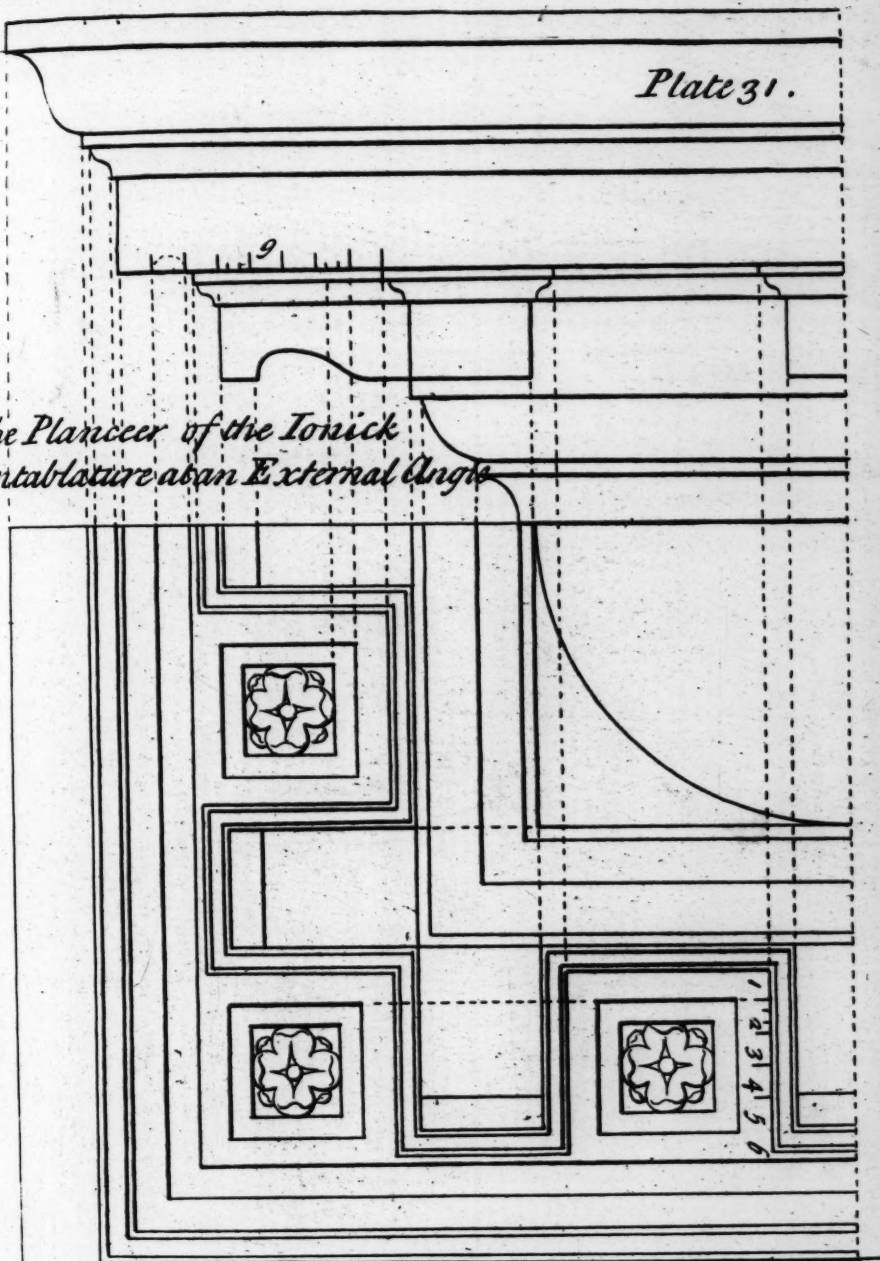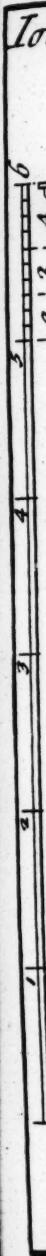
1 2 3 4 5 6

Plate 32.

2   3   4   6   6

6

3   4

3   3

3

4

3

2

1

Diameters

10
9
8
7
6
5
4
3
2
1

B.L. Inv.
1740.

T.L. Sculp

↓ 3 Diam ¼   . 3 Diam ↓

Tornick Intercolumnations, for a Modulion Cornice.....

Pl. 34.
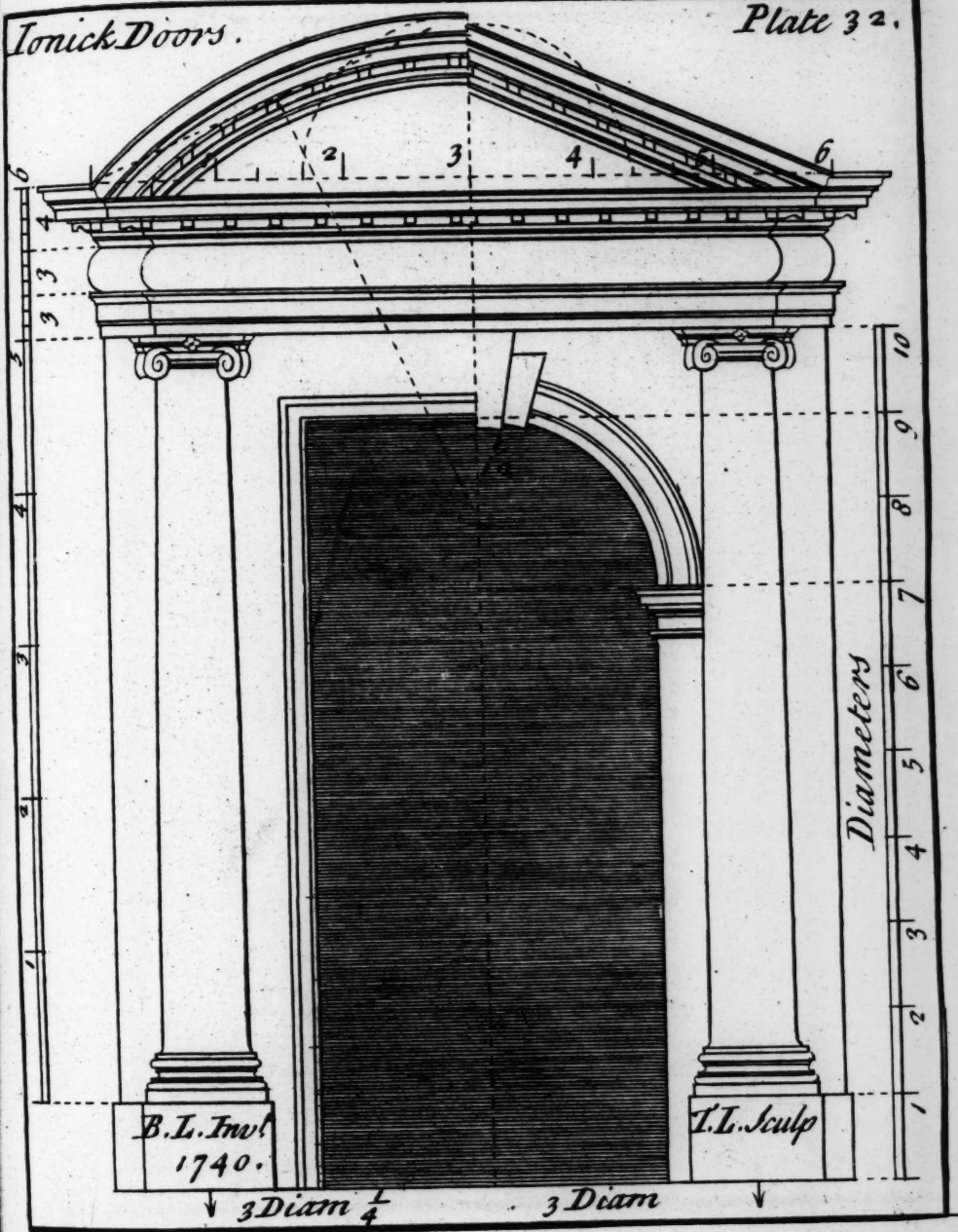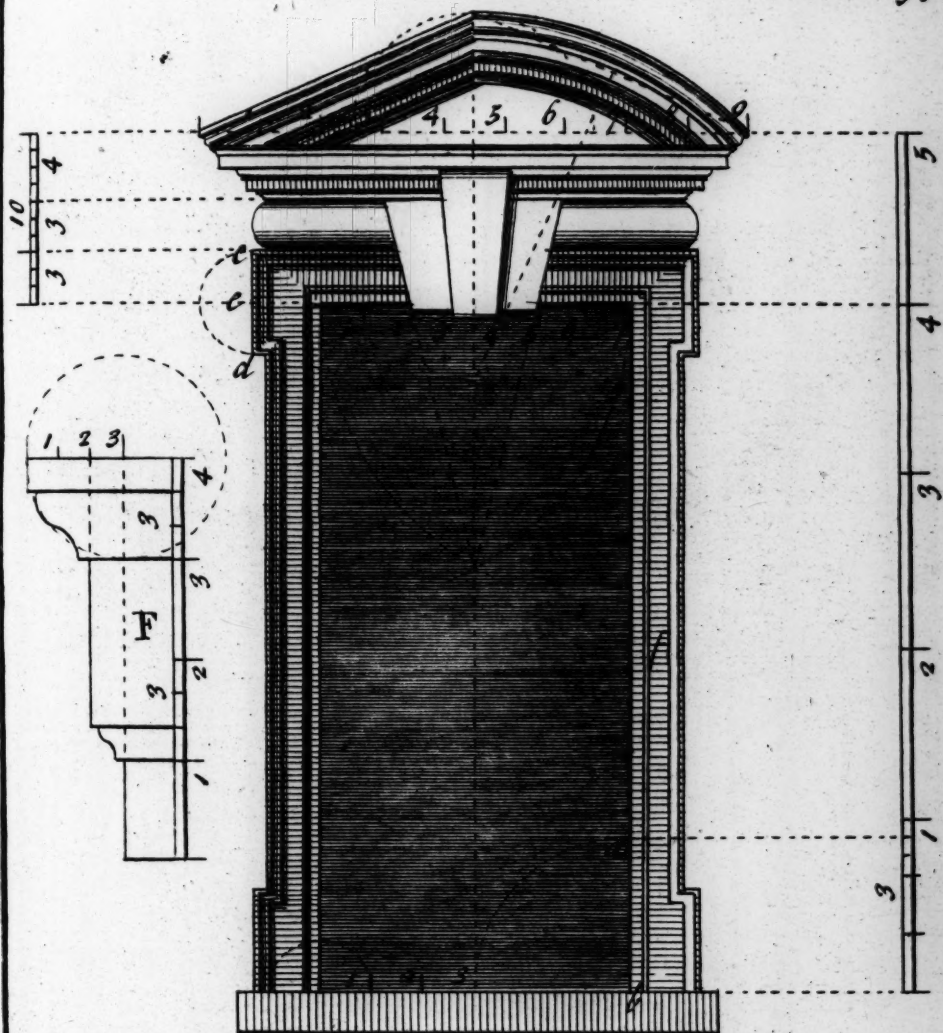
Tonick Intercolumnations, for a Modilion Cornice.

2 Mod. 3 Mod. 4 Modil. 5 Modil. 6 Modilions
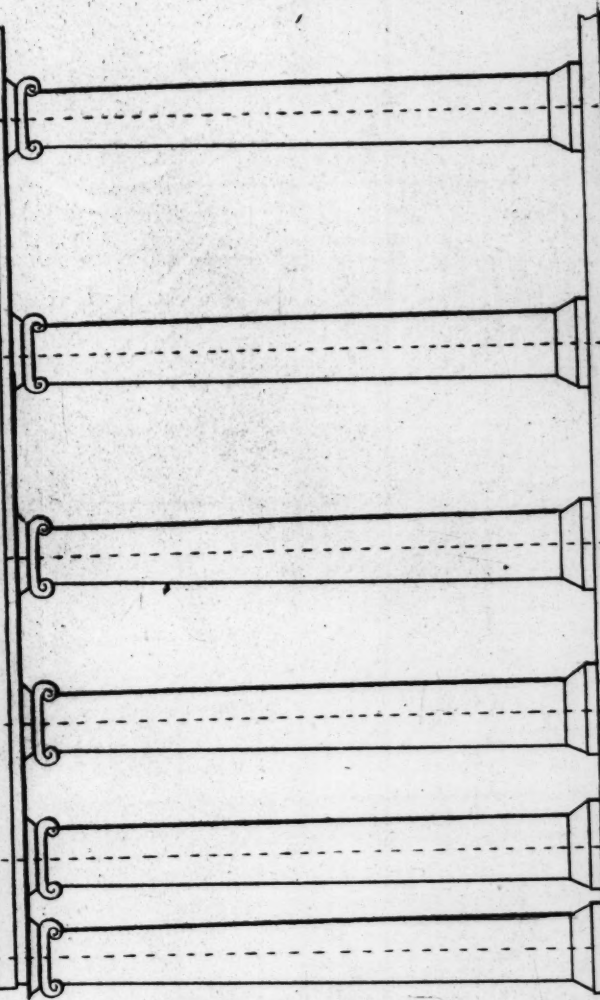
Continued Pedestal

1 D. ½ 2 Diam 2 D. ½ 3 D. 3 Diam ½

Tonick Intercolumnations for a Dentule Cornice.

Pl. 35.

Ionick Intercolumnations for a Dentule Cornice.

12 Den: 16 Dent: 20 Dent: 25 Dentules

Divide each Semidiameter in 12 give ½ a Dentule &½ to an Interval.
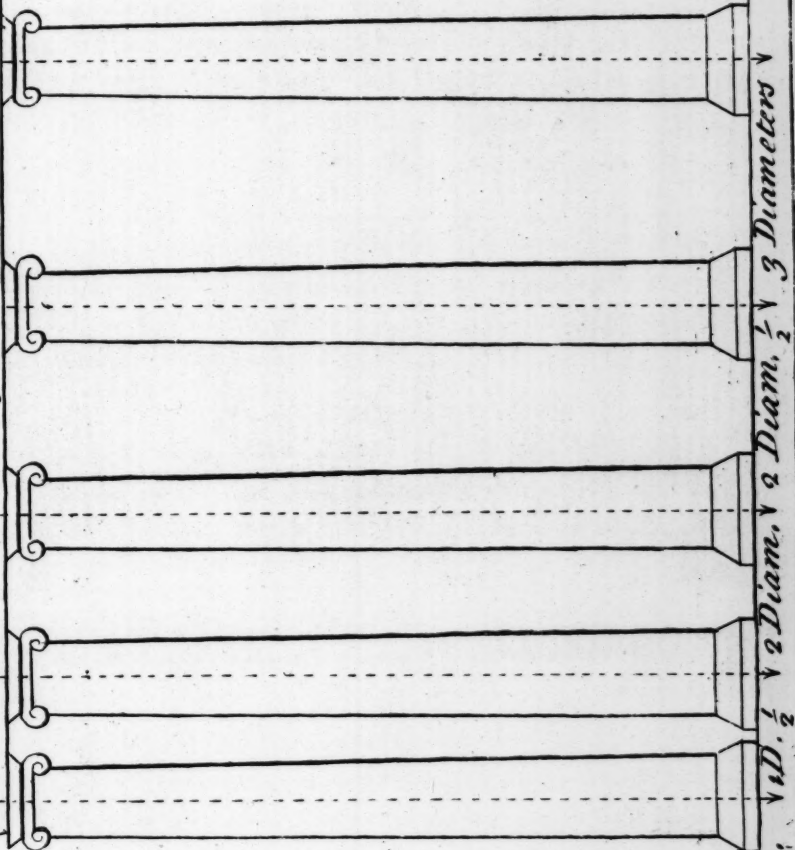
↓1 D. ½ ↓↓2 Diam. ↓2 Diam. ↓2 Diam. ½ ↓3 Diameters ↓

B. Langly Jun. 1741.

I. I. Sculp.

B. Langley Invent 1741.

T. L. Sculp

4 D. 5 Dia. 4 D.

Ionick Arches & Imports.

Pl. 37.

Ionick Arches & Imposts.

16 Modilions.

13 Modilions.

B. Langley Inv. 1741. T.L. Sculp.

6 Diameters ½.

5 Diam. ¾.

Ionick Arcades.

Plate 38.

Ionick Arcades.

6 Diam.

6 Diam.

1 D. 1/2

1 D. 1/2

C

10 9 8 7 6 5 4 3 2 1

A: Plan and of ye Gen: Parts of ye Corinthian Order with ye Pedestal & its Pt at large

Pl. 39.

T. I. Sculp.

The Divisions of ỹ Gen. Parts of ỹ Corinthian Order with ỹ Pedestal & its Pdt at large.

A

B

Corinthian Pilaster

Corinthian Column

Batty Langley Invent 1741.

The various Kinds of Leaves for the Enrichment of capitals.
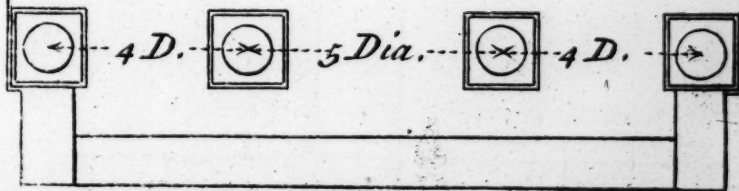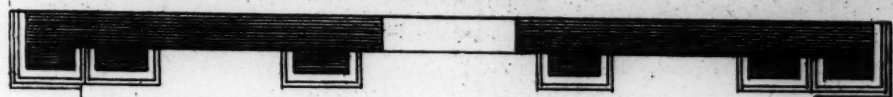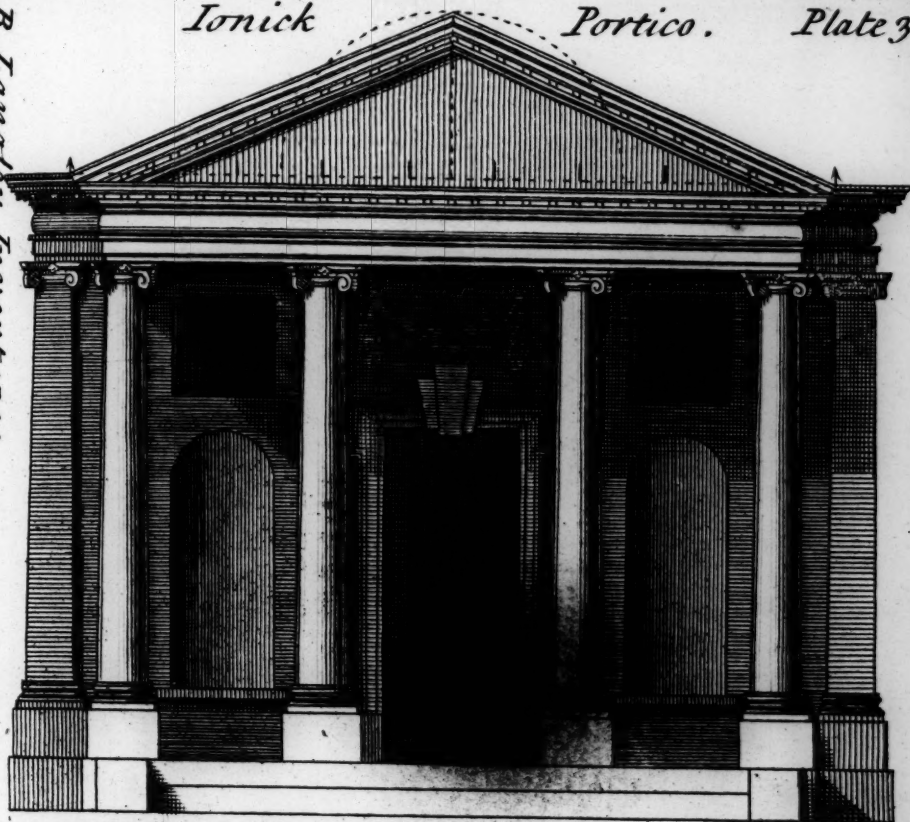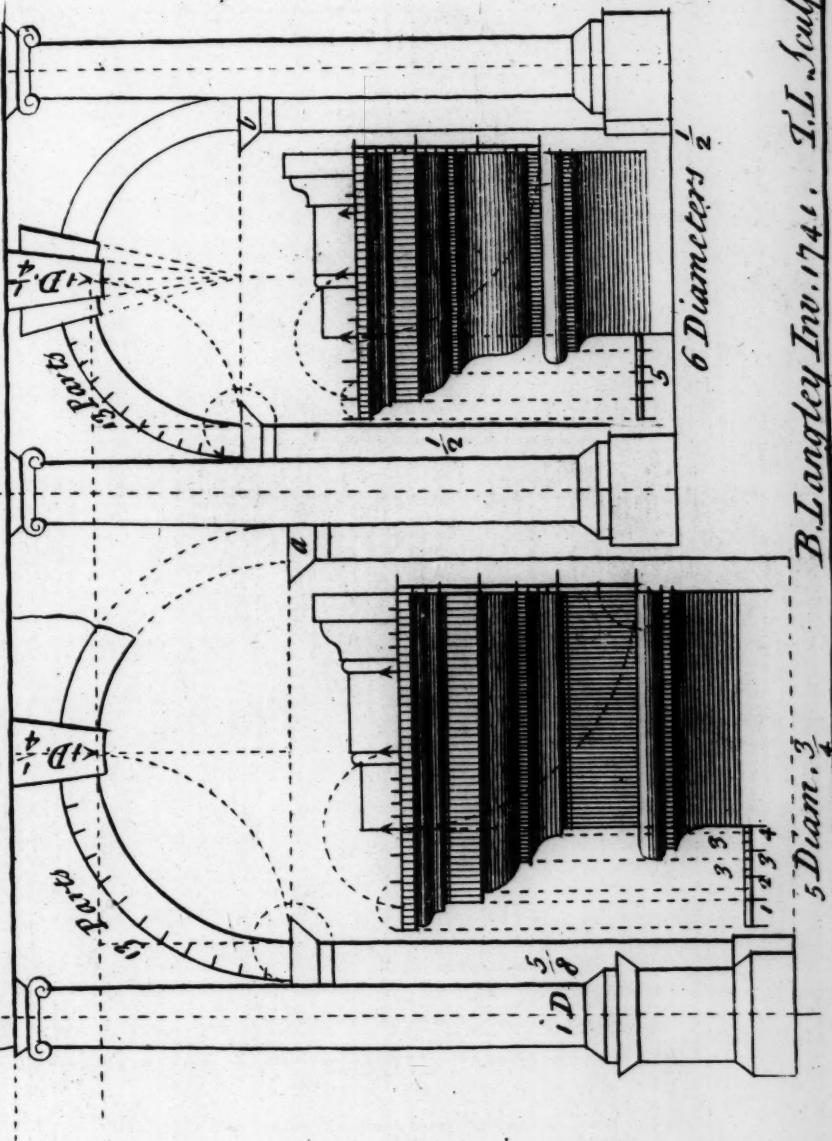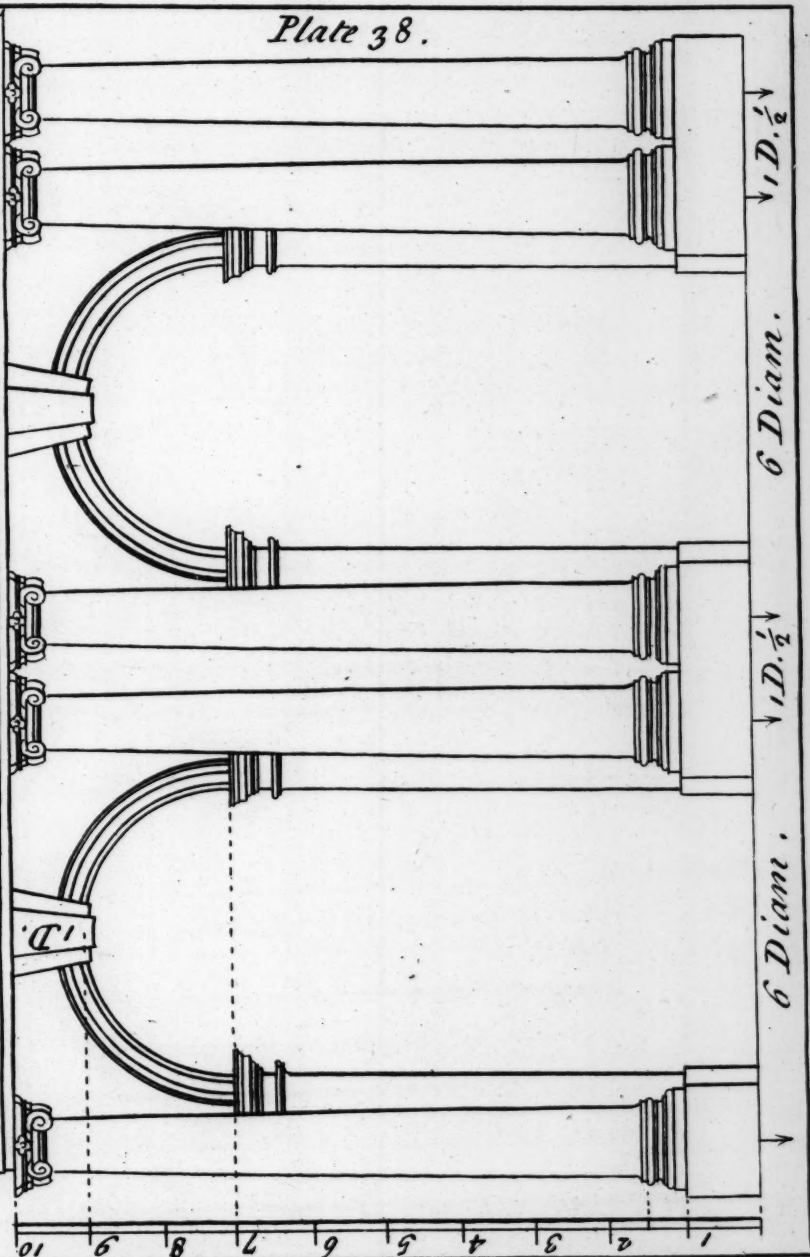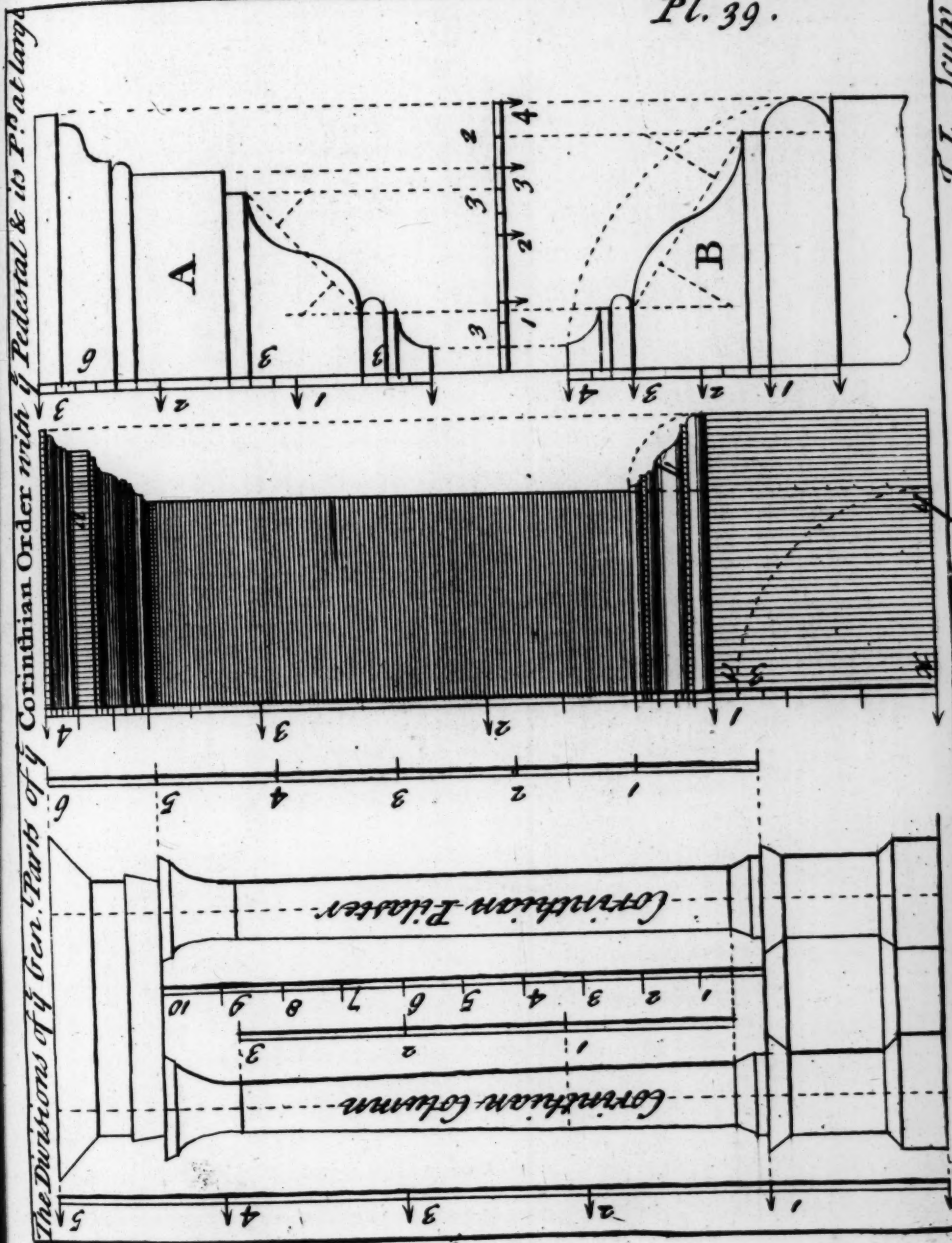
Plate 40.
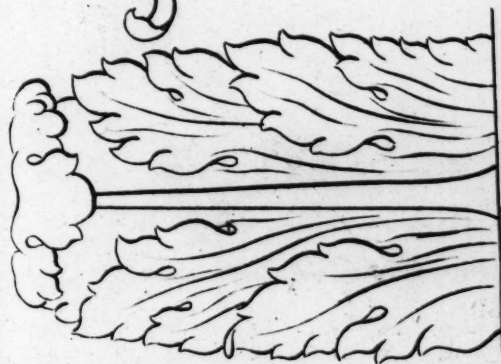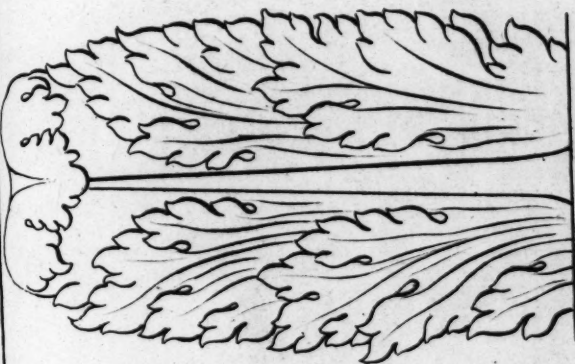
I.L. Sculp

Parsley

Acanthus

Caulicole

Acanthus
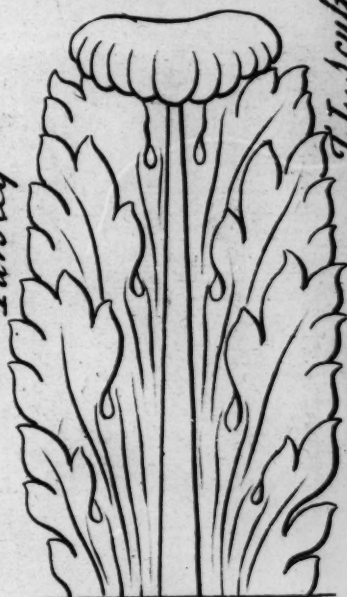
olive
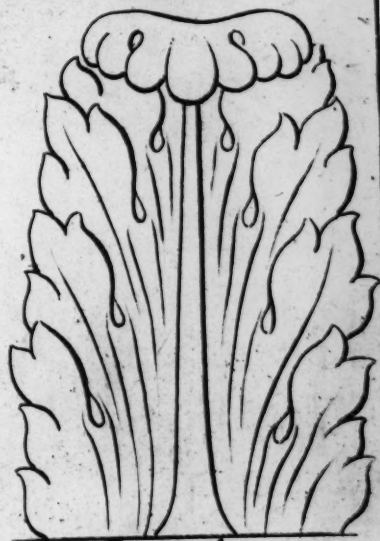
Laurel

The Corinthian Base & Capital to a Column.

Pl. 41

7

6

5

4

3

2

1

10   20   30   40   50   60

Diameter

20 Min

a   *b*
f   4   *A*
3   *c*
f   *x*
4
e   *d*
g

5   6

5   4   3   2   1
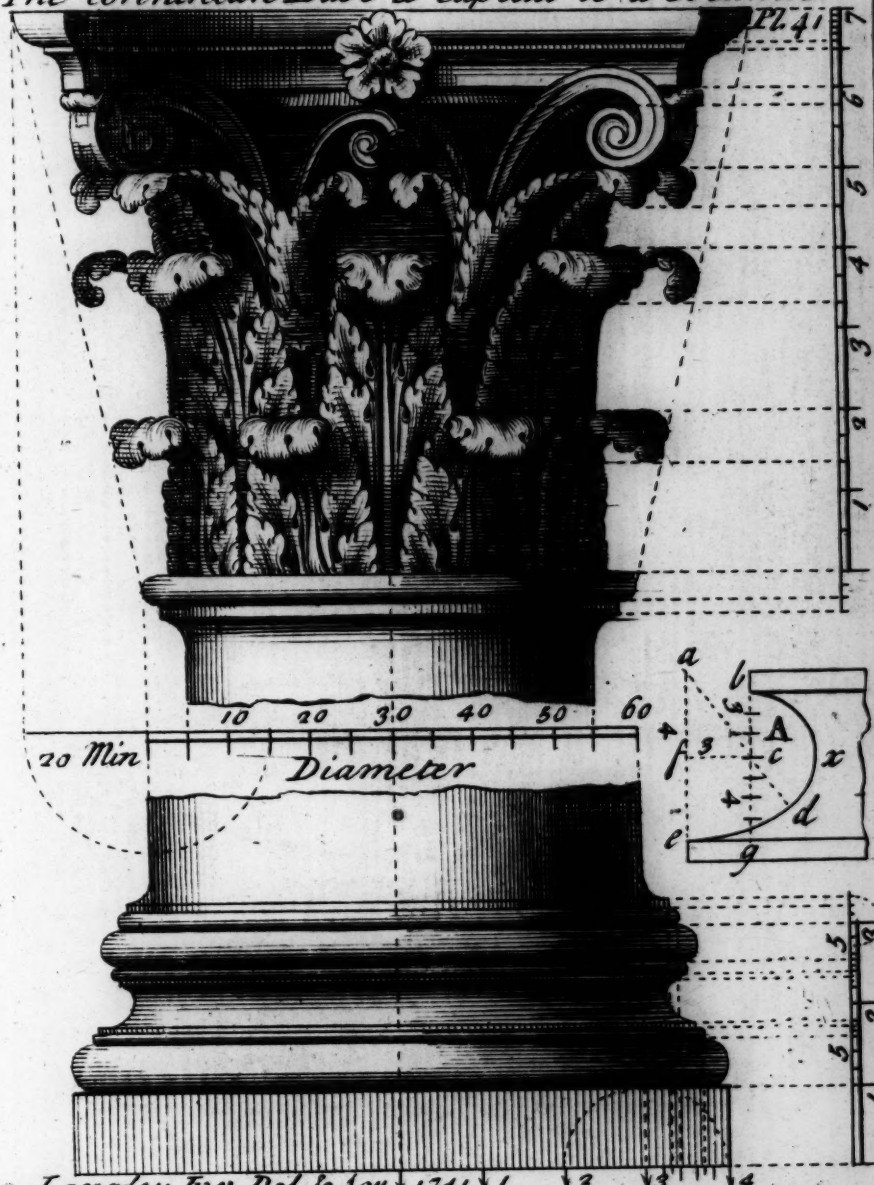
Tho. Langley Inv. Del. & Scu. 1741   1   2   3   4

The Corinthian Capital with its Plan for a Column
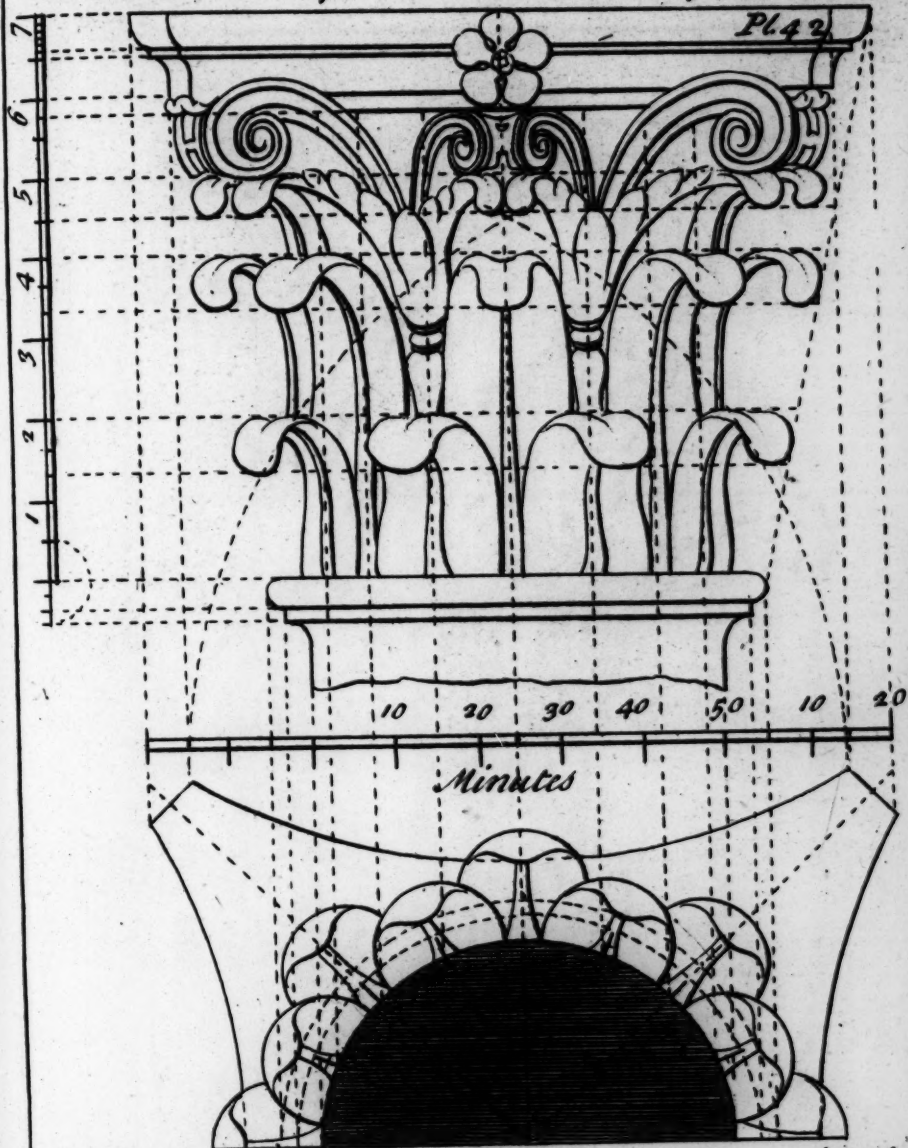
Pl. 42.

10   20   30   40   50   10   20

Minutes

Batty Langley Invent 1741.

T.L. Sculp

Pl. 43.
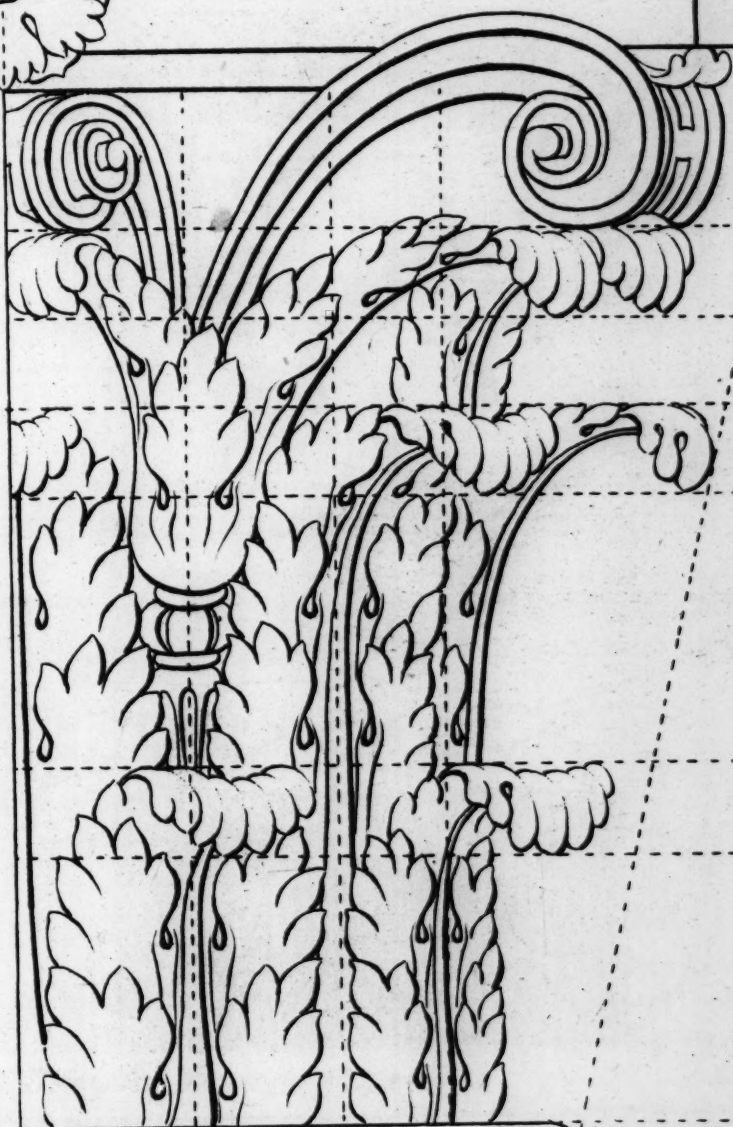
B. Langley Invt 1741.

T.L. Sculp.

The Corinthian Capital, with its Plan, for a Pilaster

Pl. 44

10 20 30 40 50 60 10 20

Minutes

Batty Langley Invent 1741.

T.L. Sculp.

Pl. 45

Note. *The distance between ye central lines of Modilions over undiminish'd Pilasters is 40 Min. over Columns, 35 Min. & their own Breadth in both Cases 10 Minutes.*

25 Min.

The Return of the Corinthian Planceer explain'd.

Plate 48.

1 2 3 4 5

Diameters

½ *1 D.* ½

½ *1 D.* ½

BL.Invent
1740

I.L.Scu.

7 Diameters.
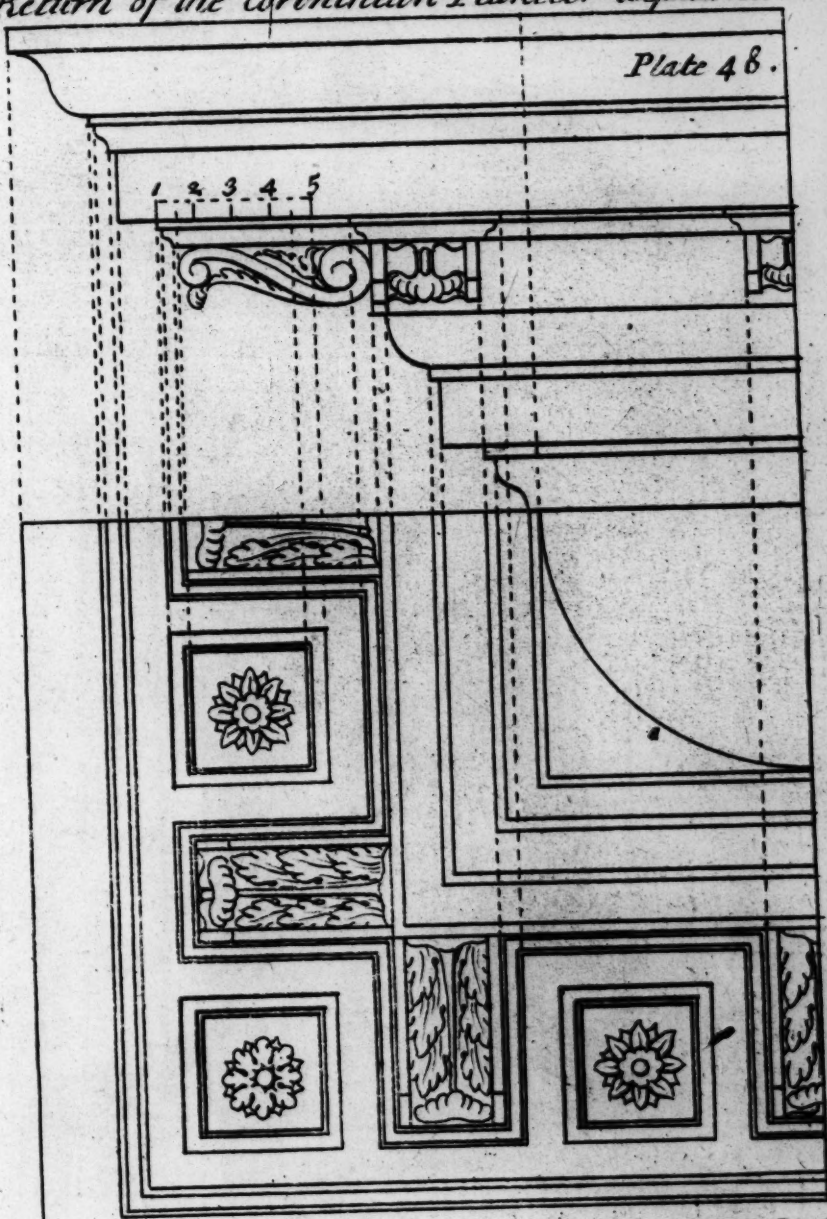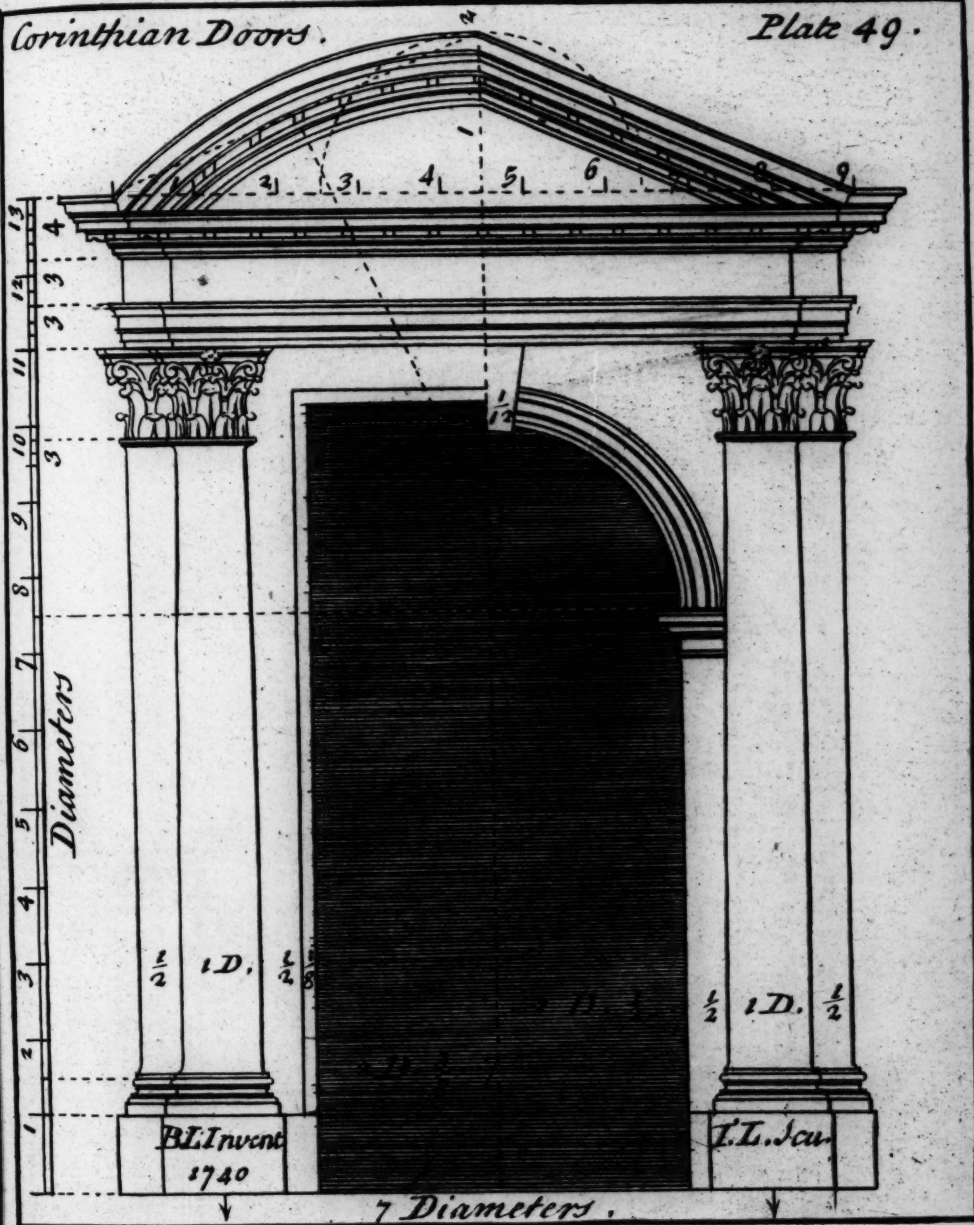
Corinthian Window.

Plate 50.
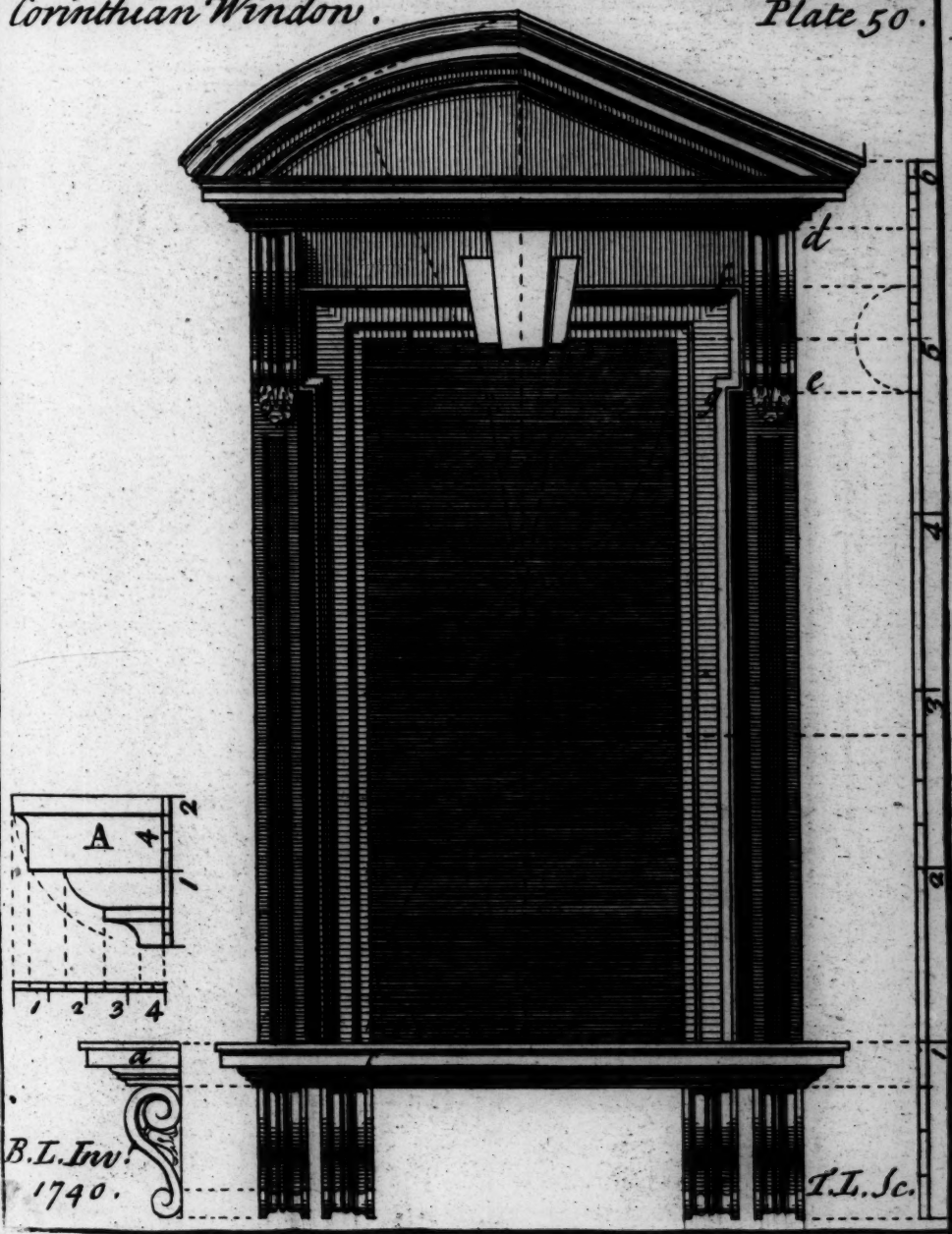
A

B.L. Inv.
1740.

I.L. Sc.

Corinthian Key Stone or Console
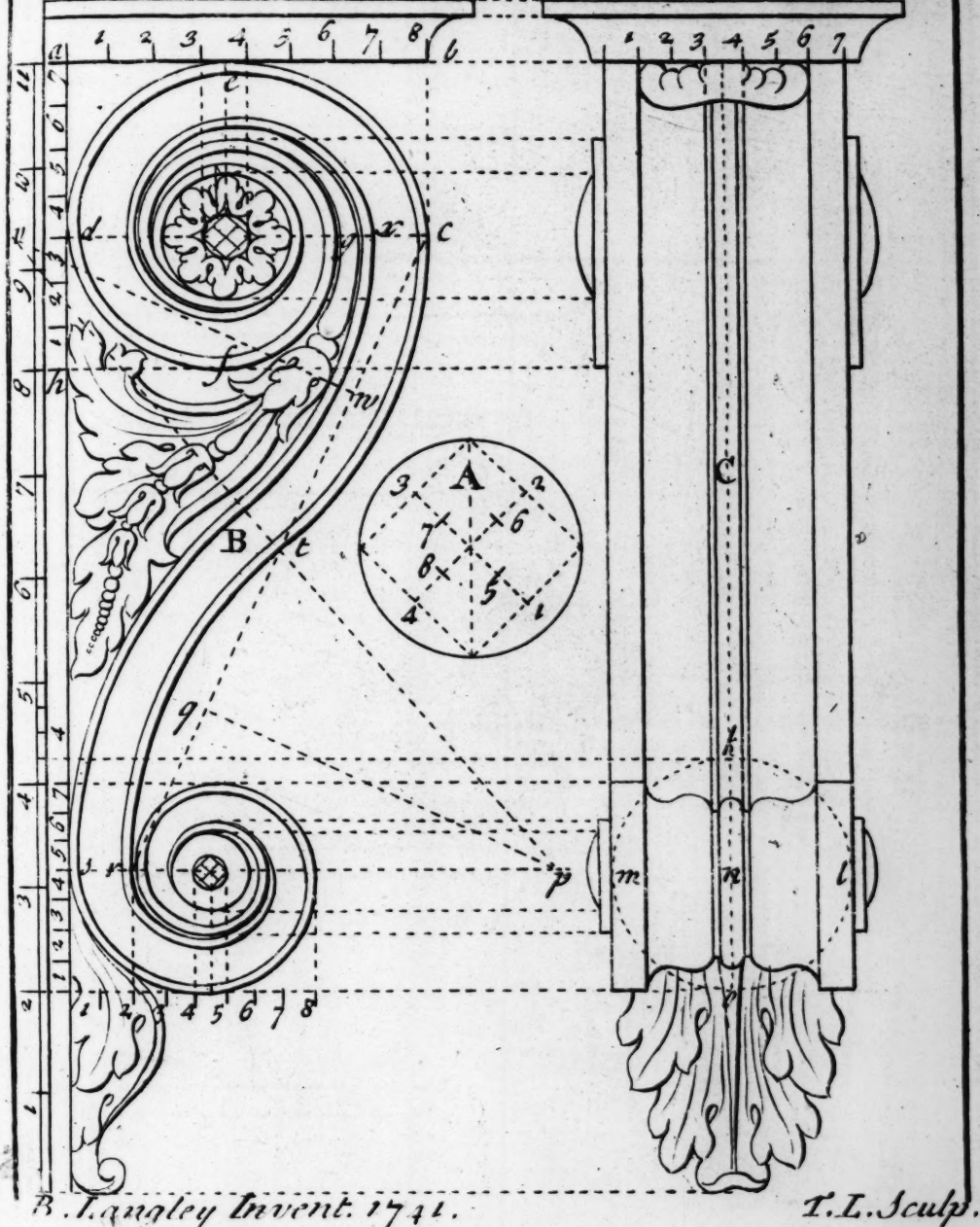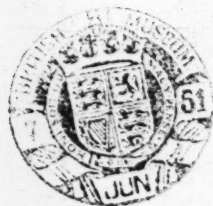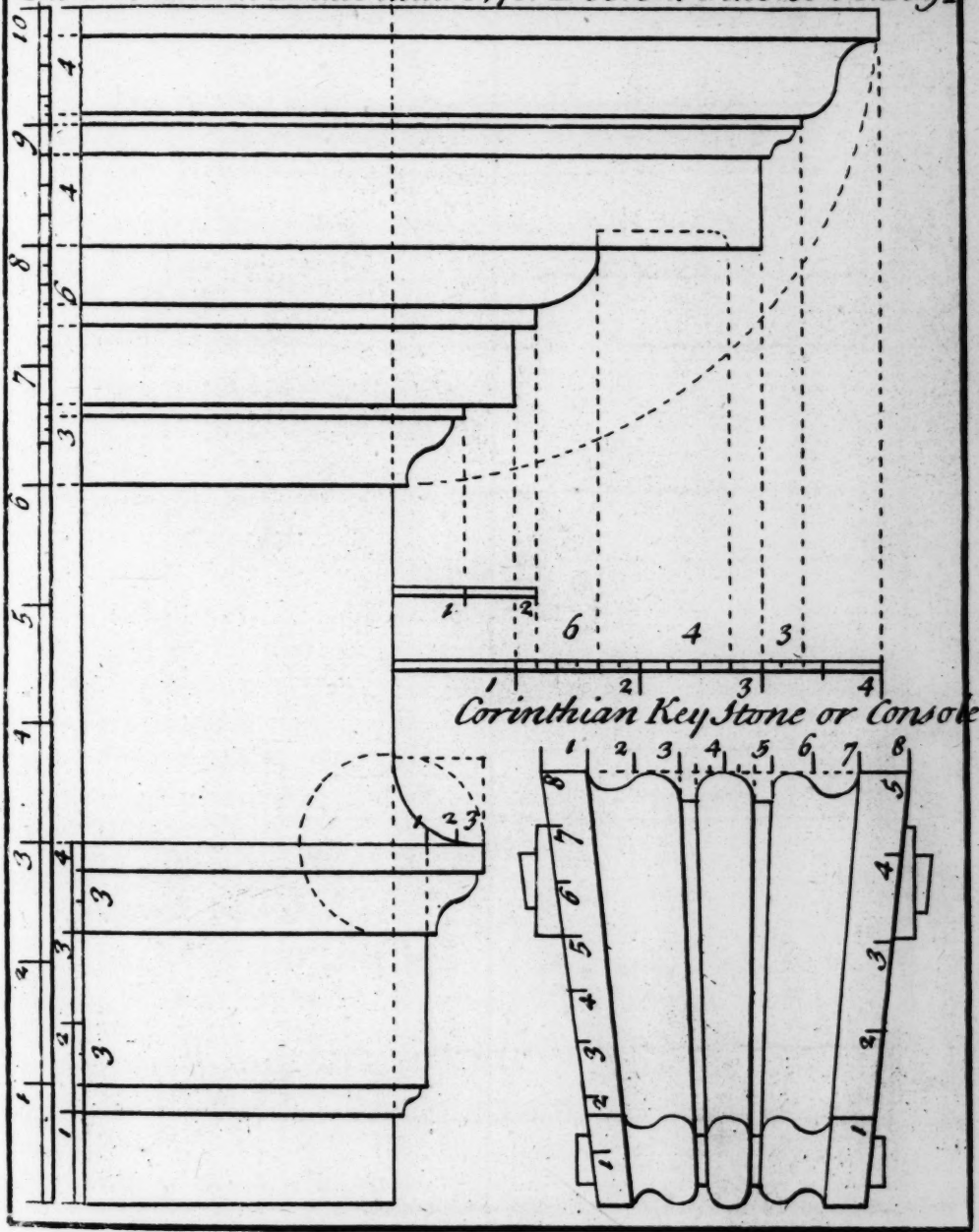
Plate 53.

Corinthian Intercolumnations.

7. Modilions. 6. Modil. 5. Modil. 4. Modil.

N. L. L. Sculp.

2 Diam. 2 M. 2 Diam. 5 M. 3 Diam. 30 M. 4 Diam. 5 Min.
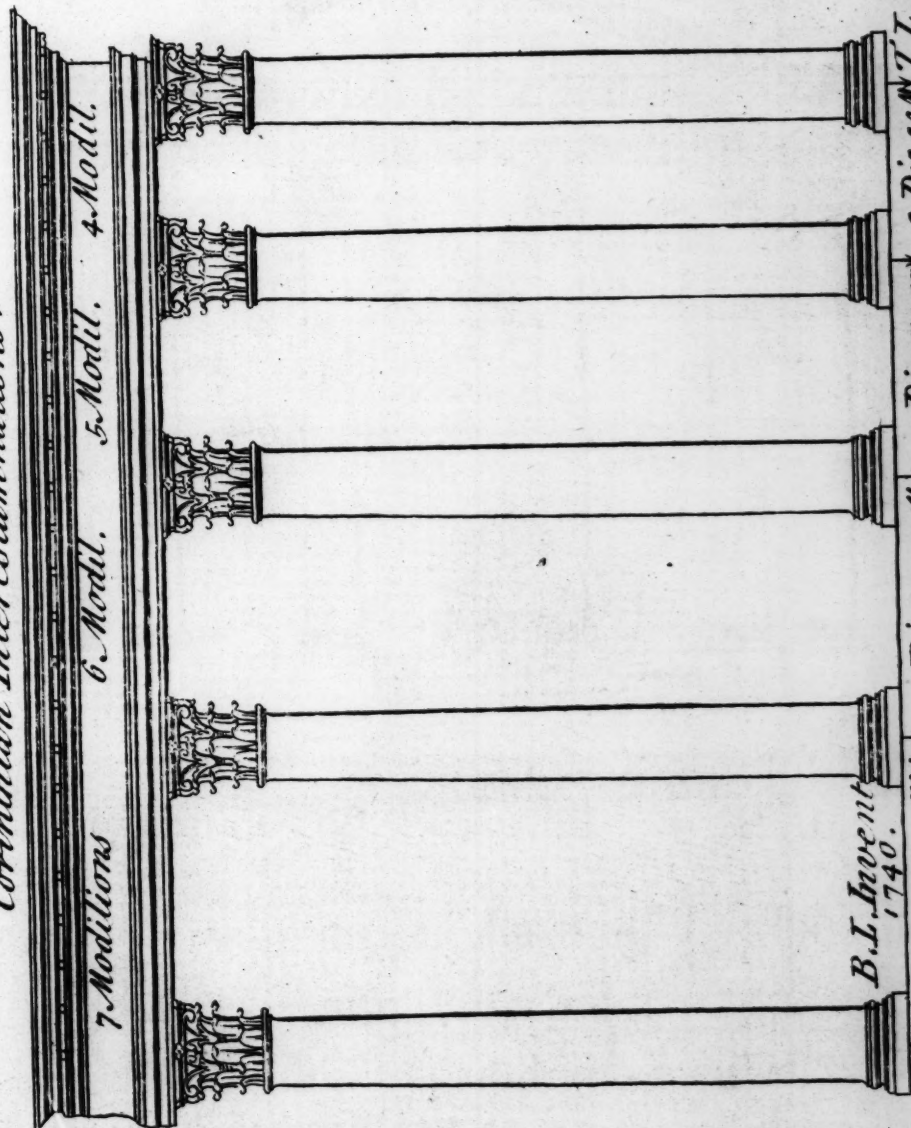
B. L. Invent. 1740.

Corinthian .... Portico . Pl. 54.
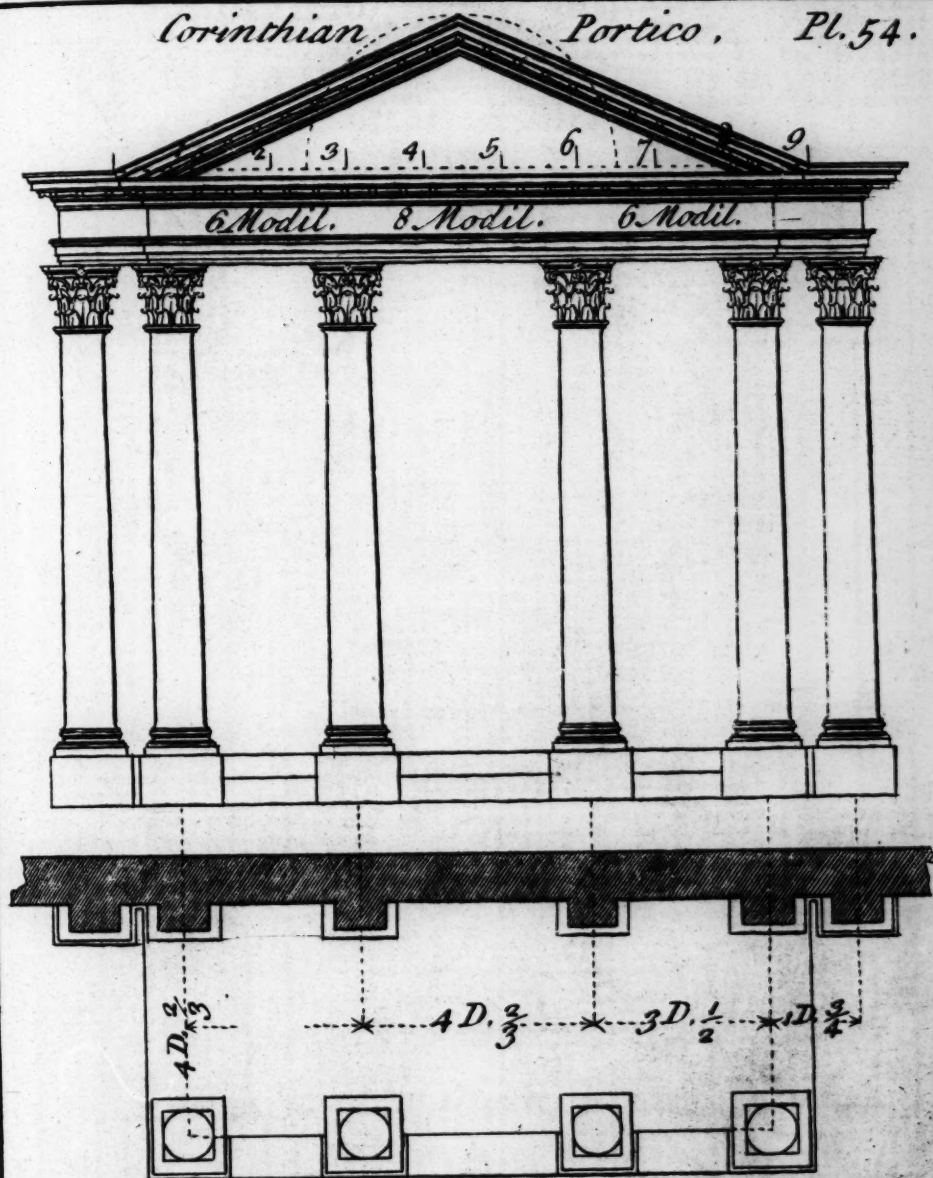
2 3 4 5 6 7 9

6 Modil. 8 Modil. 6 Modil.

$4D.\frac{2}{3}$ $4D.\frac{2}{3}$ $3D.\frac{1}{2}$ $1D.\frac{3}{4}$

B. Langley Invent 1740.

T. L. Sculp.

14 Modilions.

Architrave

Impost

$\frac{2}{3}$ *1D.* $\frac{2}{3}$

6 Diam. $\frac{5}{6}$

8 Diameters $\frac{1}{6}$

B. Langley Invent 1740.

T.L. Sculp

Plate 56.

Corinthian Arcades.

3 Mod. 11 Modillions. 3 Mod. 11 Modillions.

5 Diam. 25 M. 1/2 1D. 1/2 1D. 1/2 5 Diam. 25 M. 1/2 1/2

1/12

T.L. Sculp.

B.L. Invent. 1740.

V.D. 3/4 V. 6 Diam. 25 Min. V.D. 3/4 V. 6 Diam. 25 Min. V.D. 3/4 V.
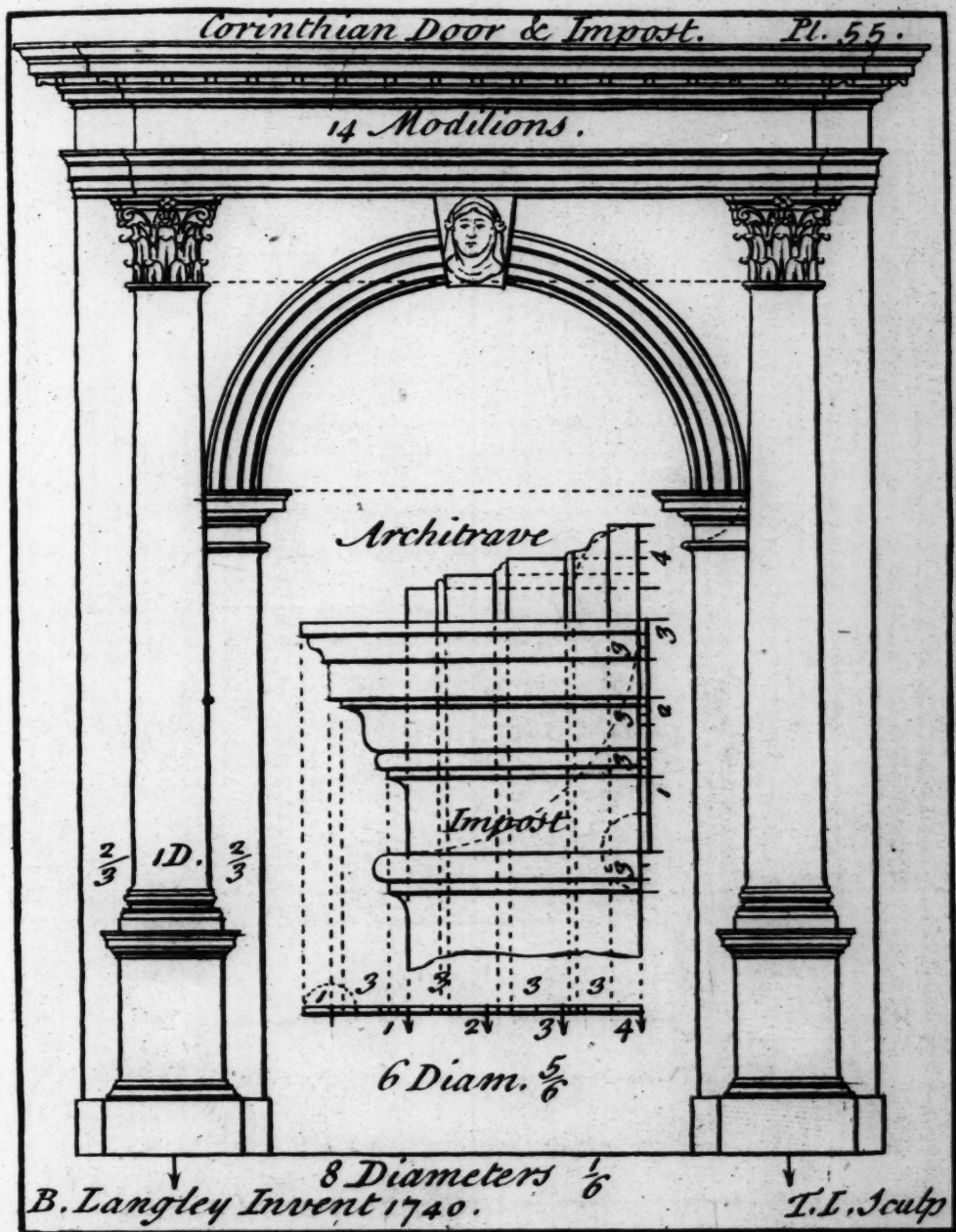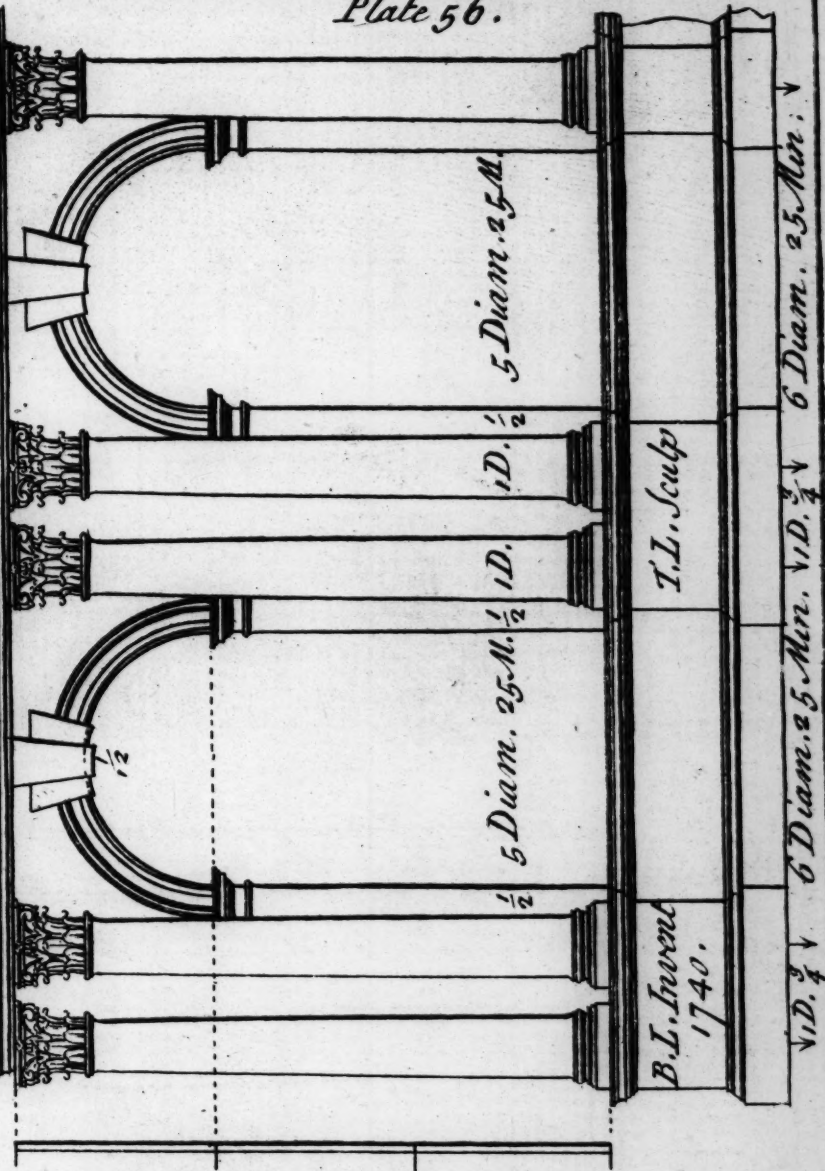
Pl. 57.

The Division of the General Parts of the Composite order with the Pedestal at large.

A

T L Sculp

B. Langley Invent 1740

Minutes

10   20   30   40   50   60

Composite Capital for a Column *Pl. 59.*
at large
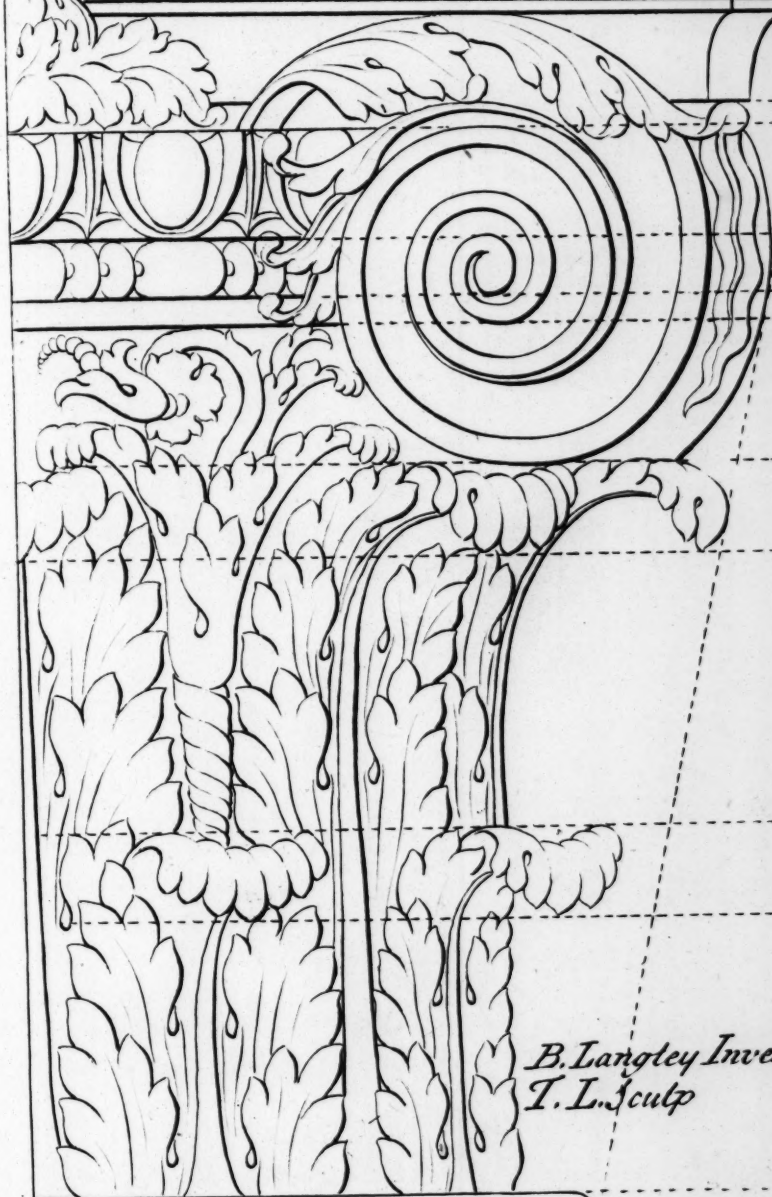
B. Langley Invent 1740
T. L. Sculp

Pl. 60.

Composite Capital for a Pilaster
at large.
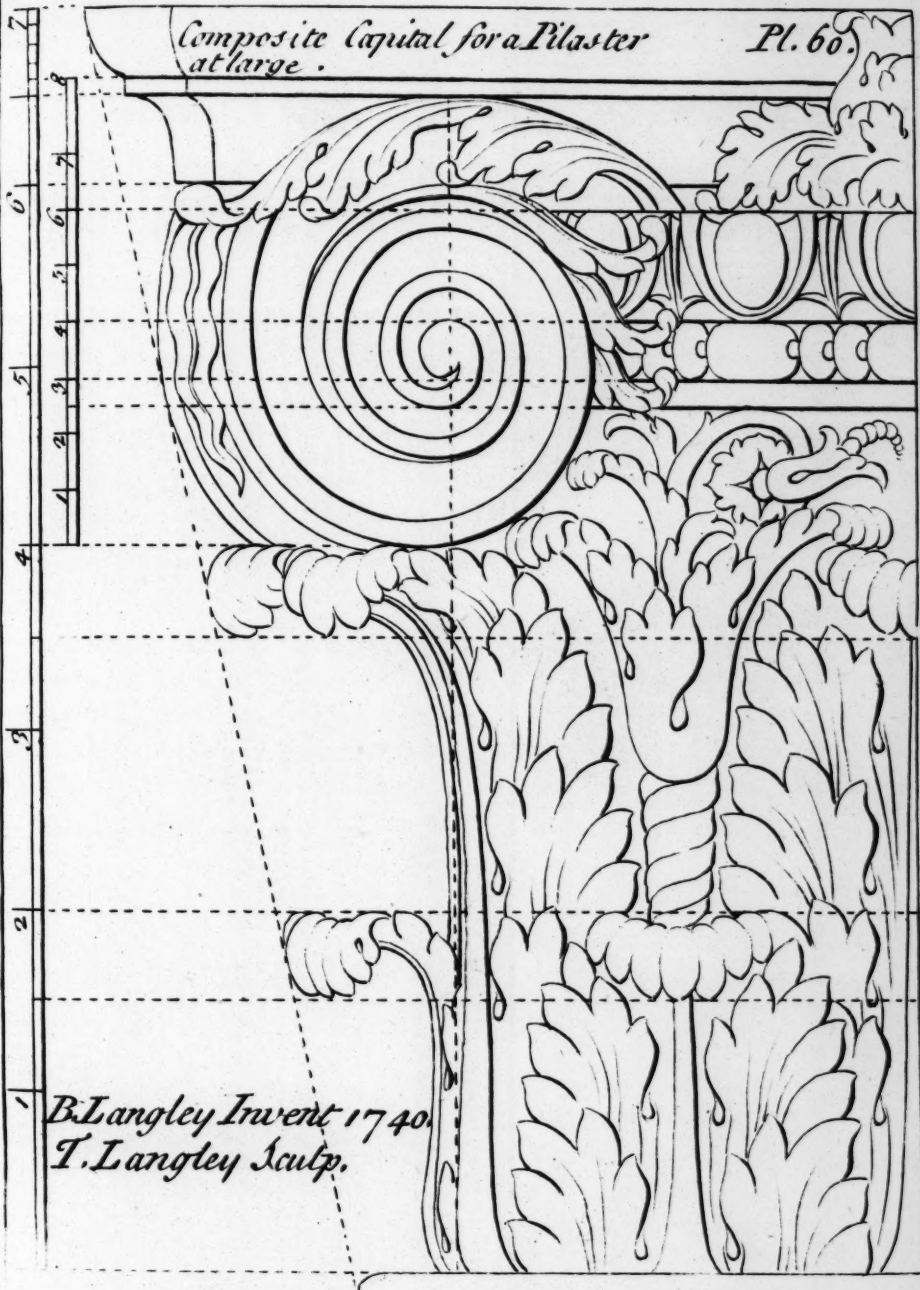
B. Langley Invent 1740.
T. Langley Sculp.

½ Diam.

Pl. 62.
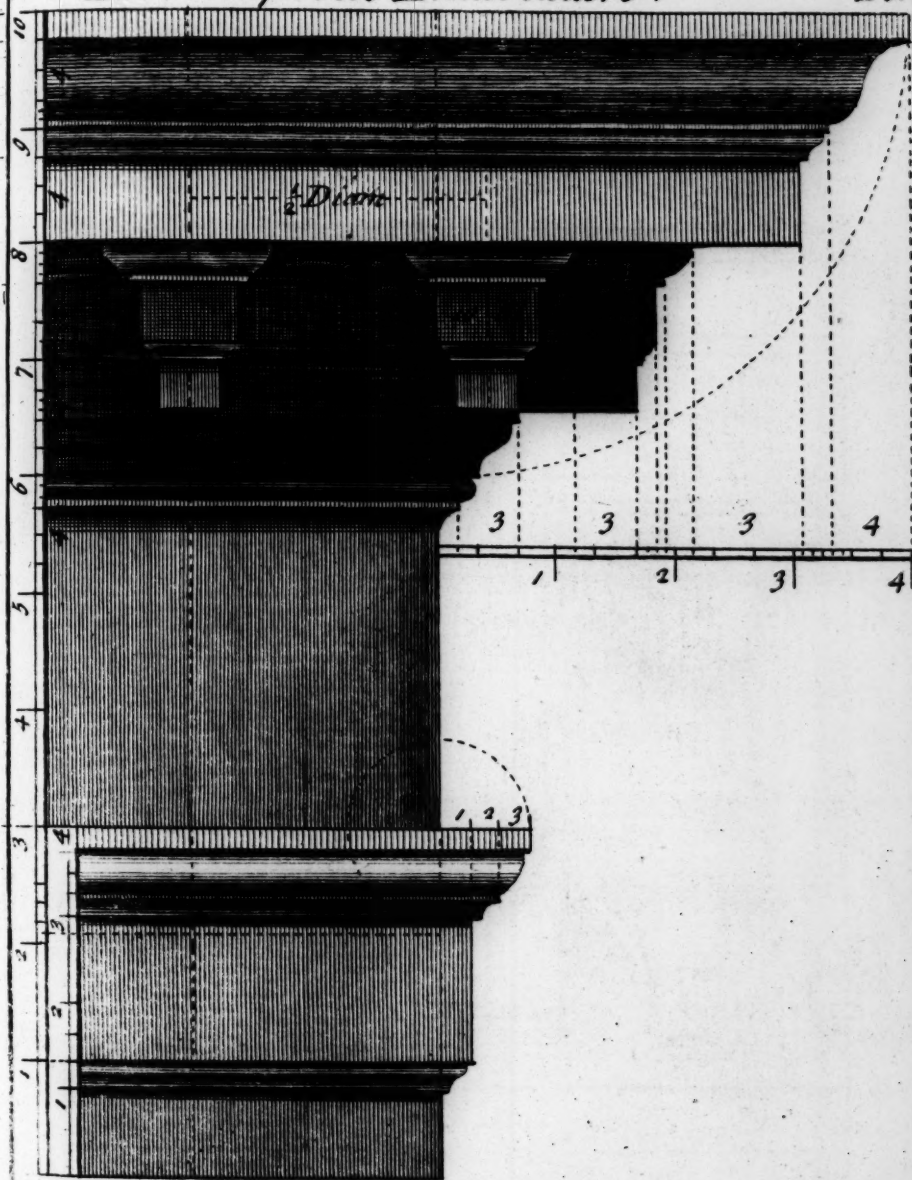
The Planceer of the Composite Cornice.

9 8 7 6 5 4 3 2 1

½ Diam:

10 m
1   2   3   4   5   6

Pl. 63.

Tuscan open Pediments.

Make y^e Projections 4. 5. 6. at A equal to y^e Projec^n. 4.5. 6 at B
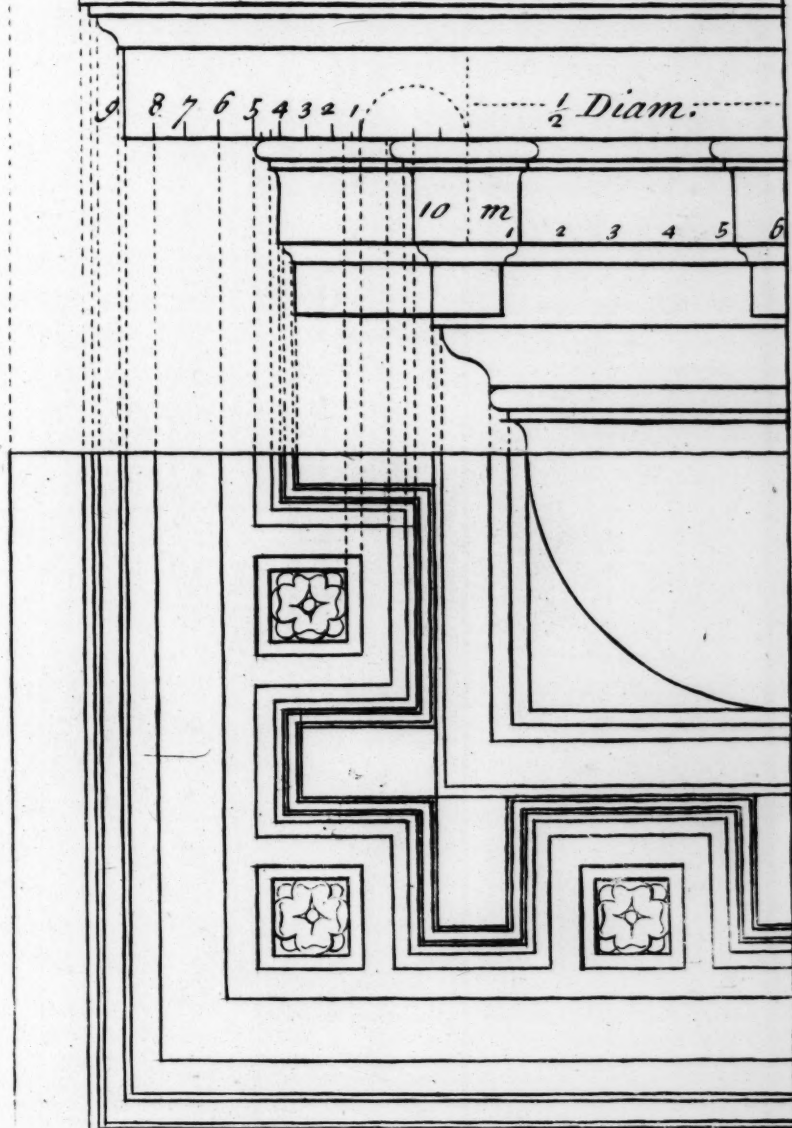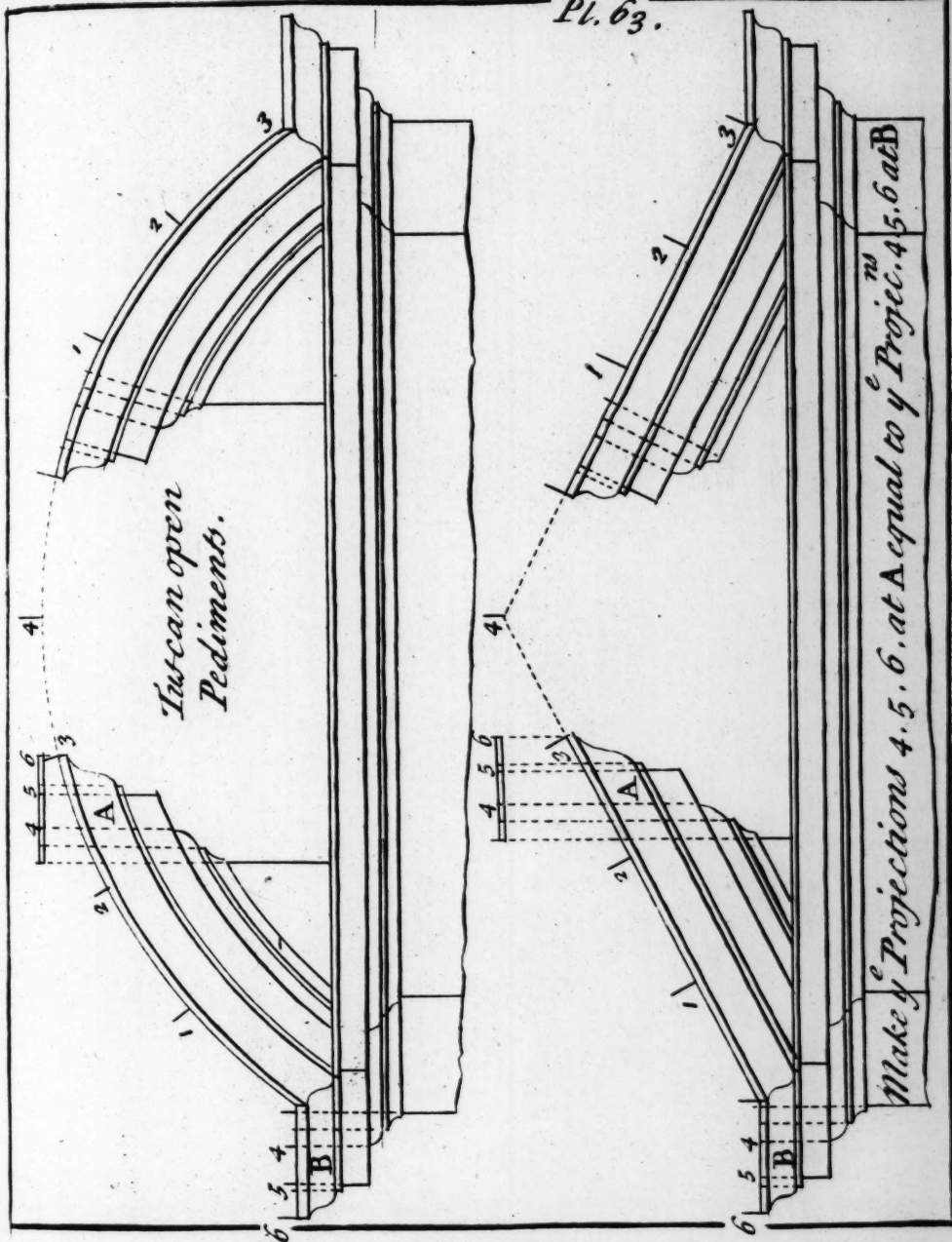
B. Langley Invent 1741.
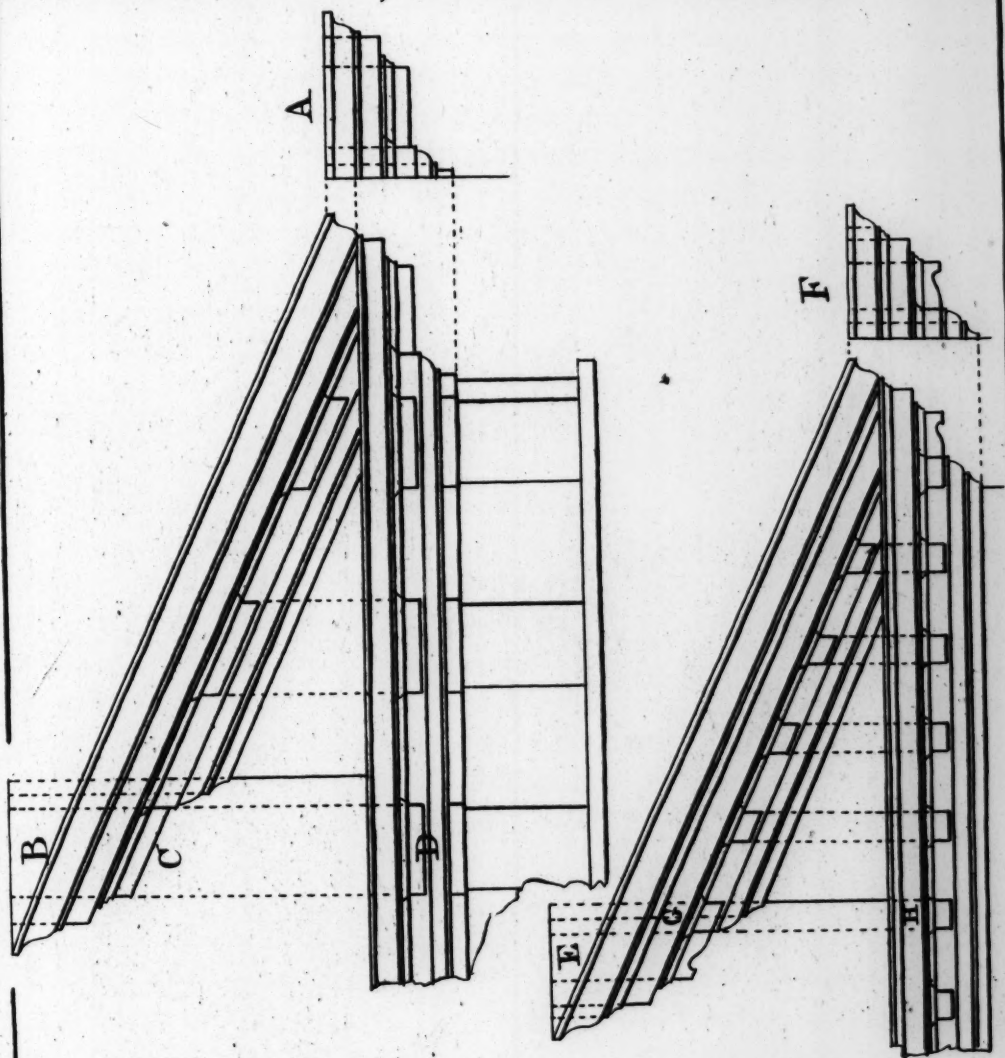
The Baking Cima recta
Explain'd.

A

B

C
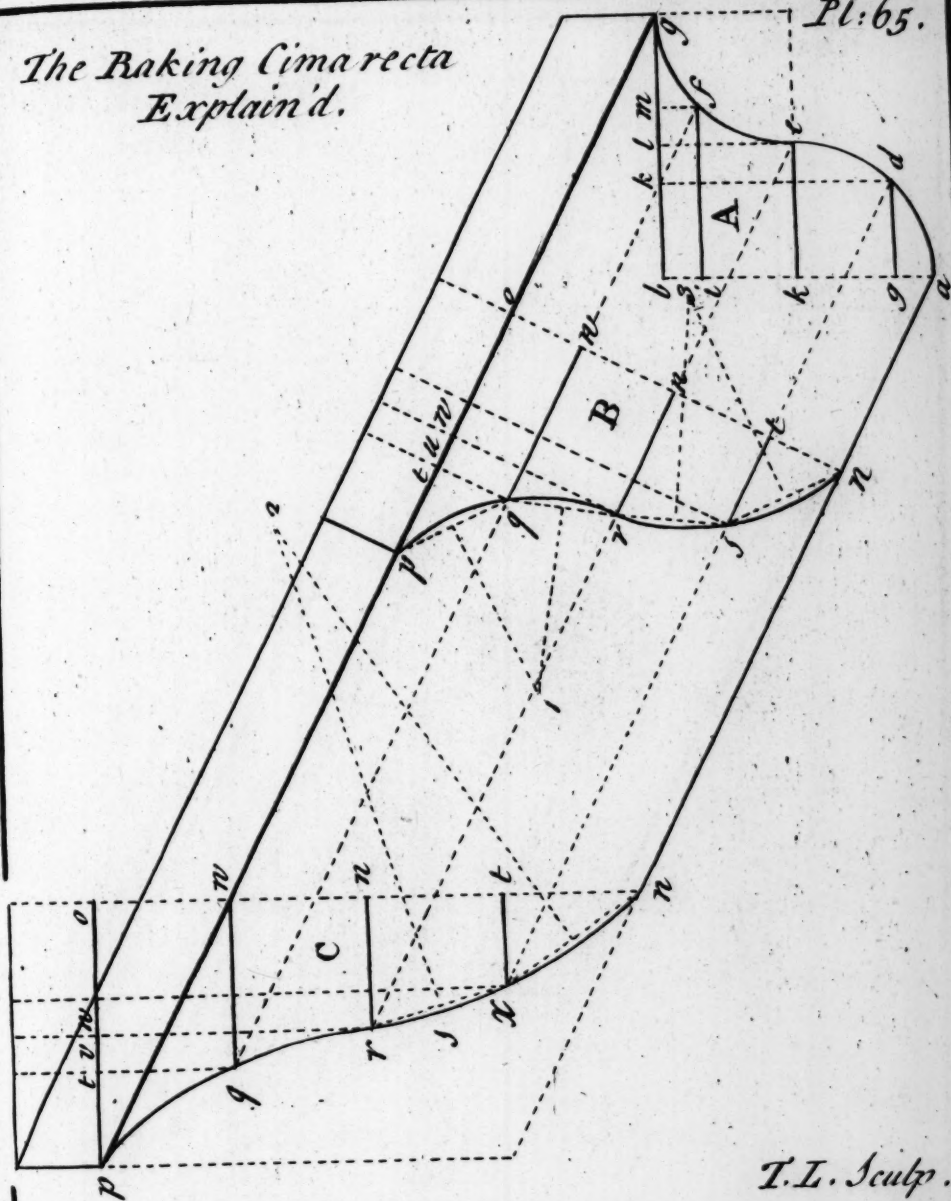
T.L. Sculp.

Pl. 66.

The Raking Ovolo Explain'd.

A

B

C
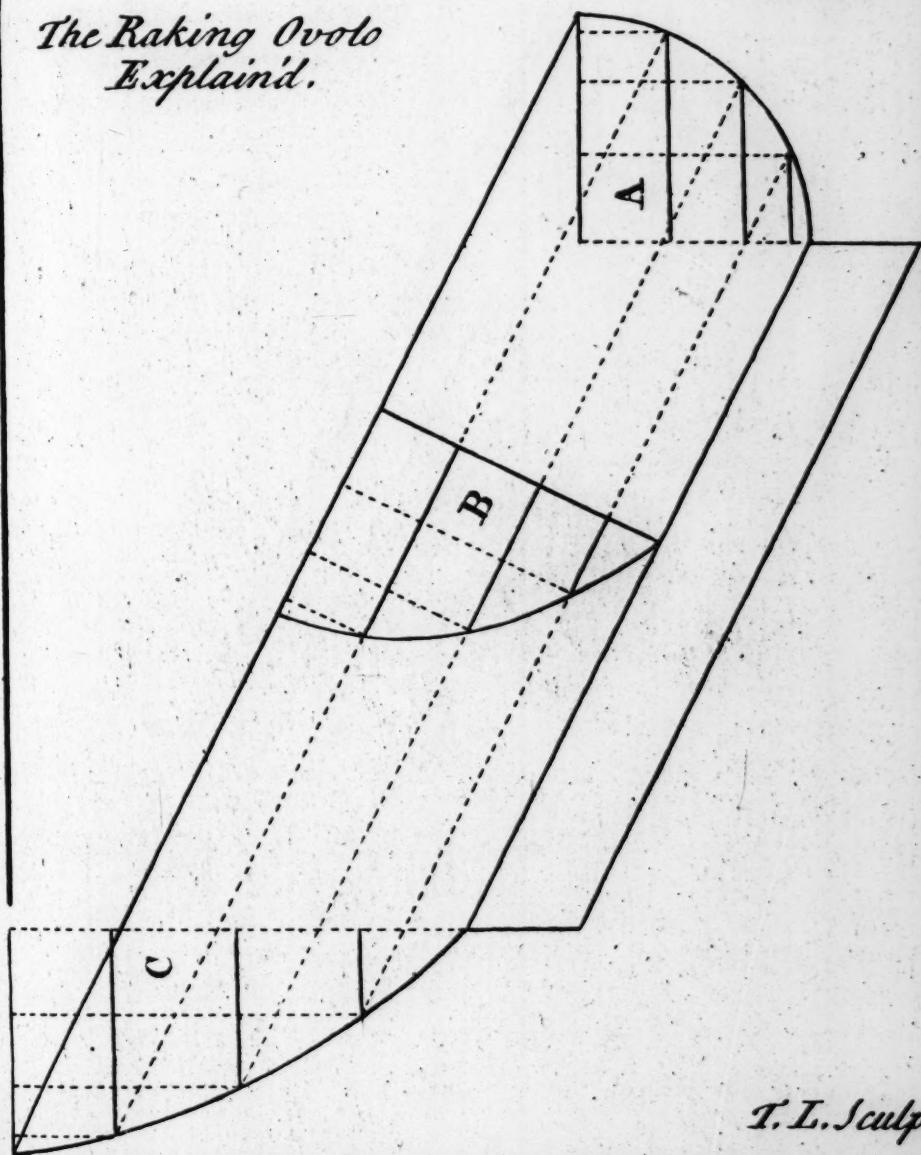
T.L. Sculp.

The Raking Cavetto Explain'd.

Pl. 67.

T.L. Sculp.

Pl. 69.

5

22 Parts

Open Bed mould Pedim.ᵗˢ

5

22 Parts

B. Langley Invent 1740

T.L. Sculp.

Pl. 70
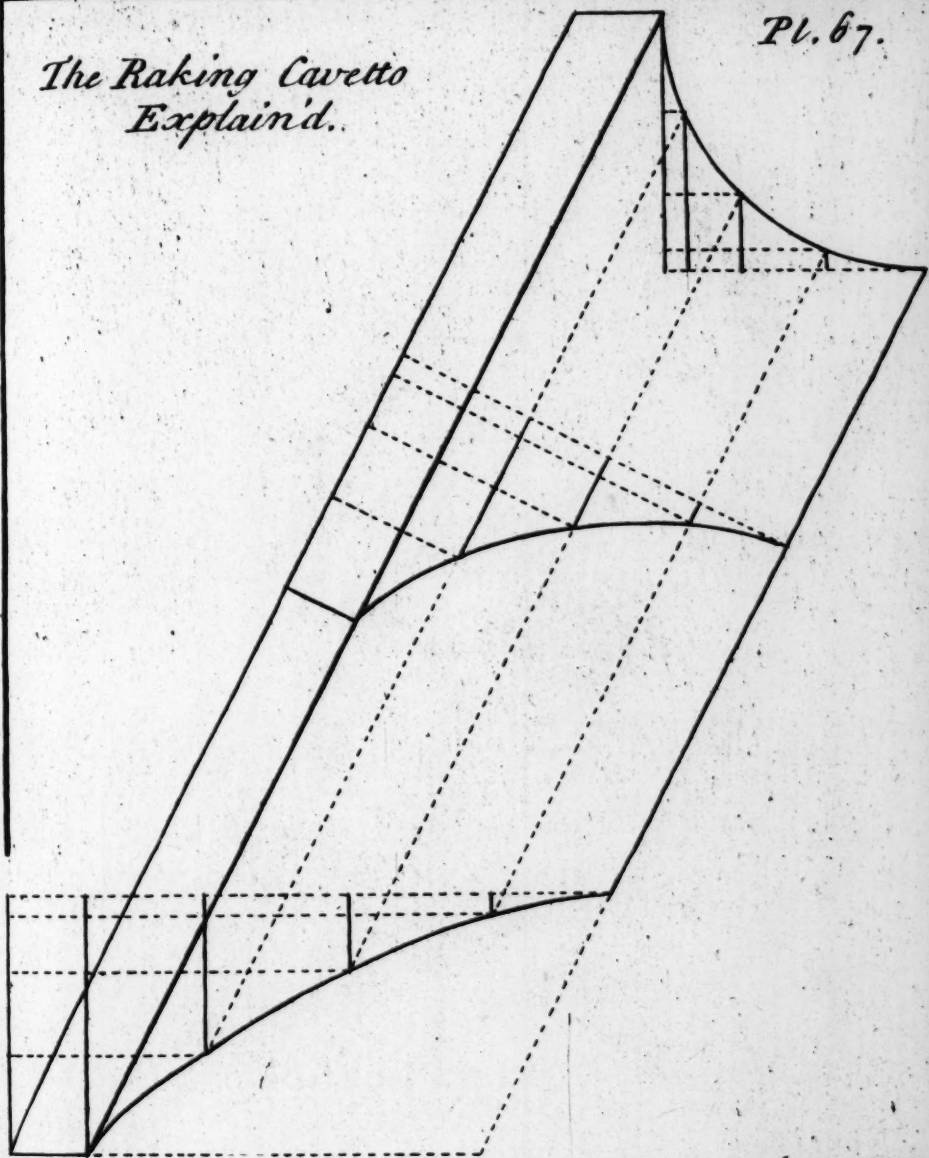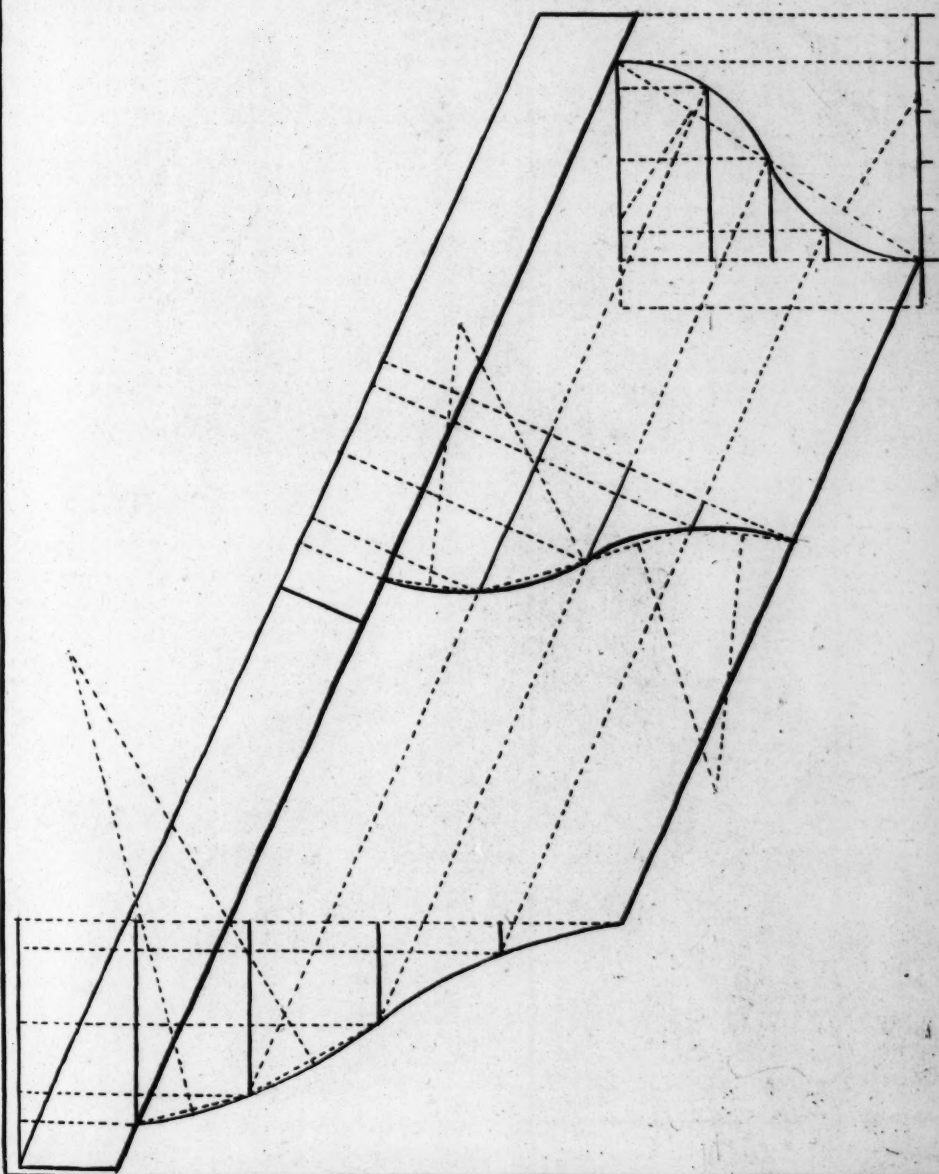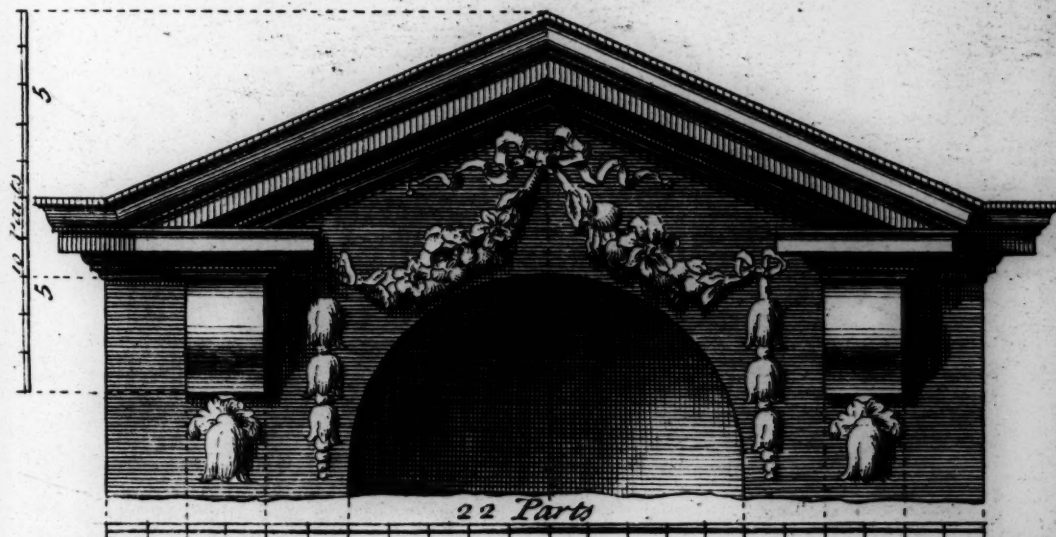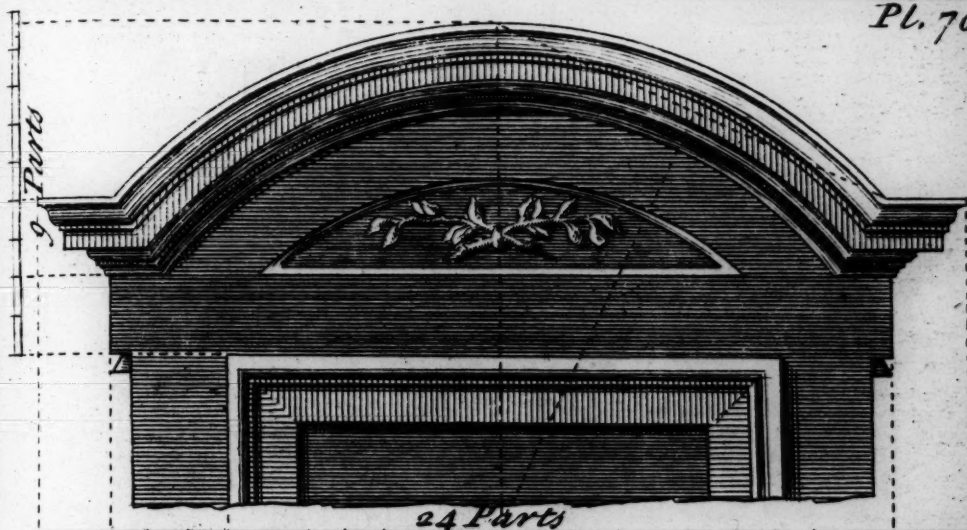
9 Parts

24 Parts

Pediments of continued Cornices.

6 Parts

12 Parts

B. Langley Invent 1740.

T.L. Sculp.

Pl. 71.
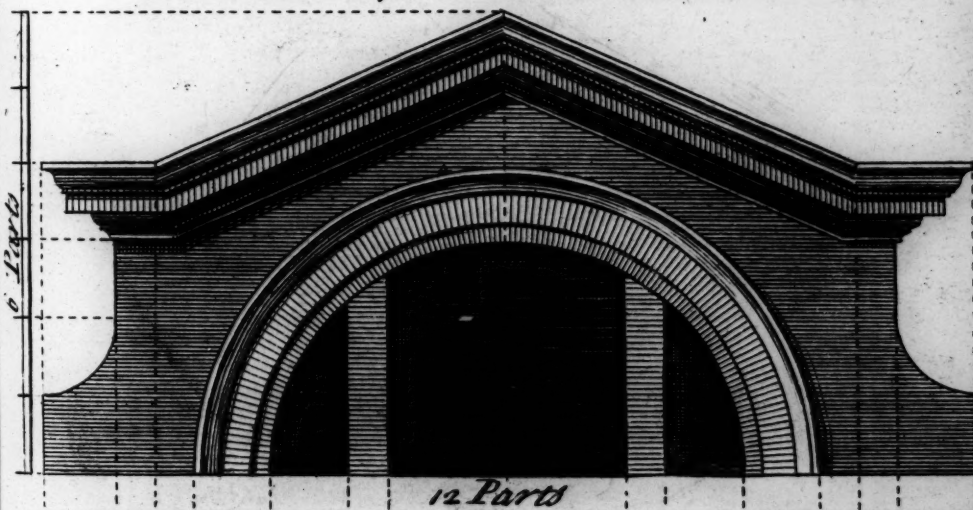
Double Arched
Pediment.

6

1   2   3   4   5

Scroll Pedim.t

1

2

3

3

B.L. Invent 1740.

12 Parts.
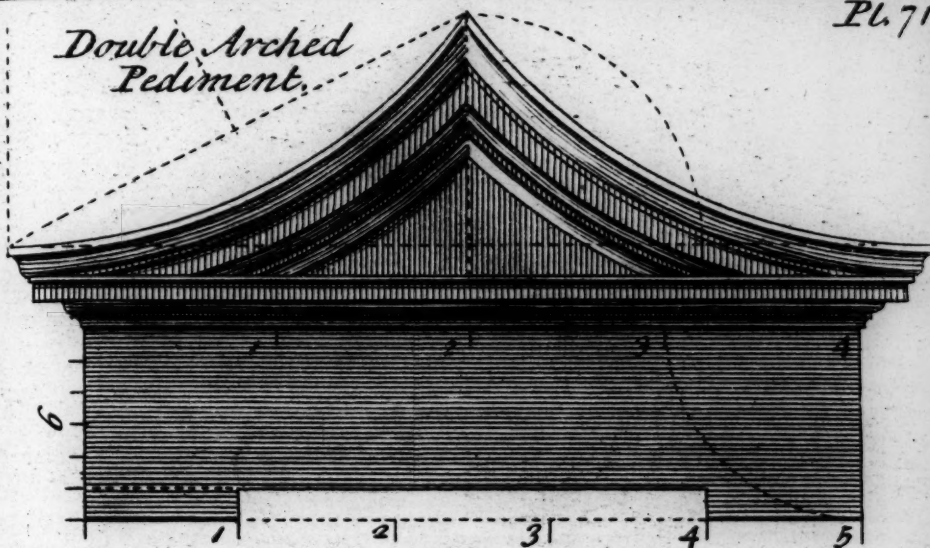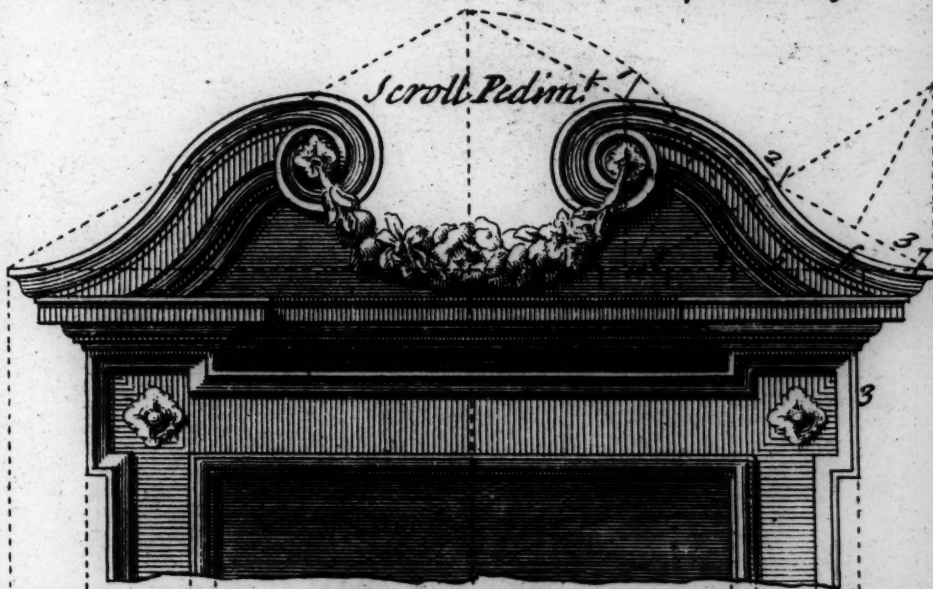
I.L. Sculp.

Ogee Scheme
Pediment.

Pl. 72.

12 Parts

6

6

6
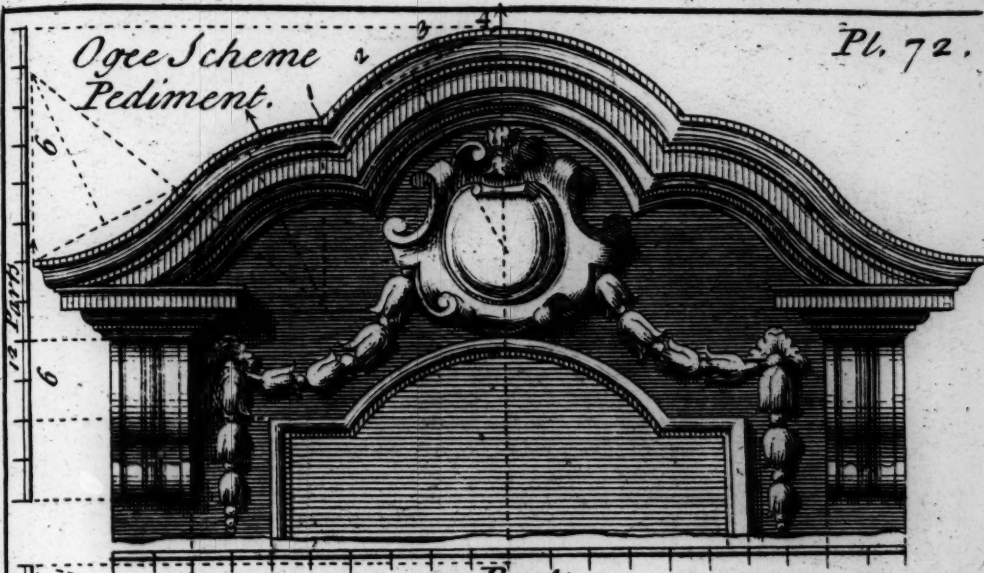
20 Parts

Triple Curved
Pediment
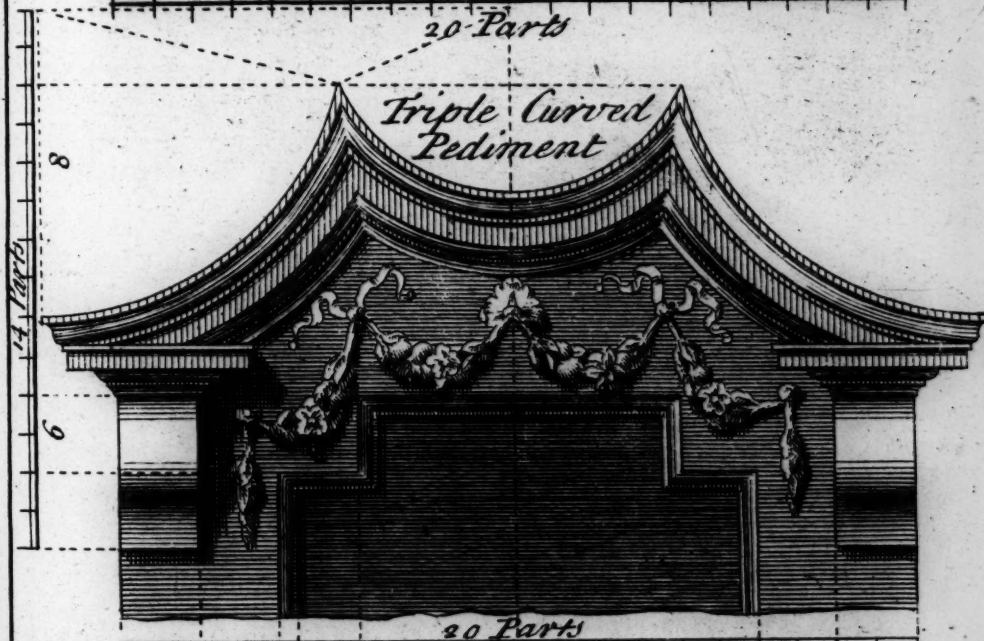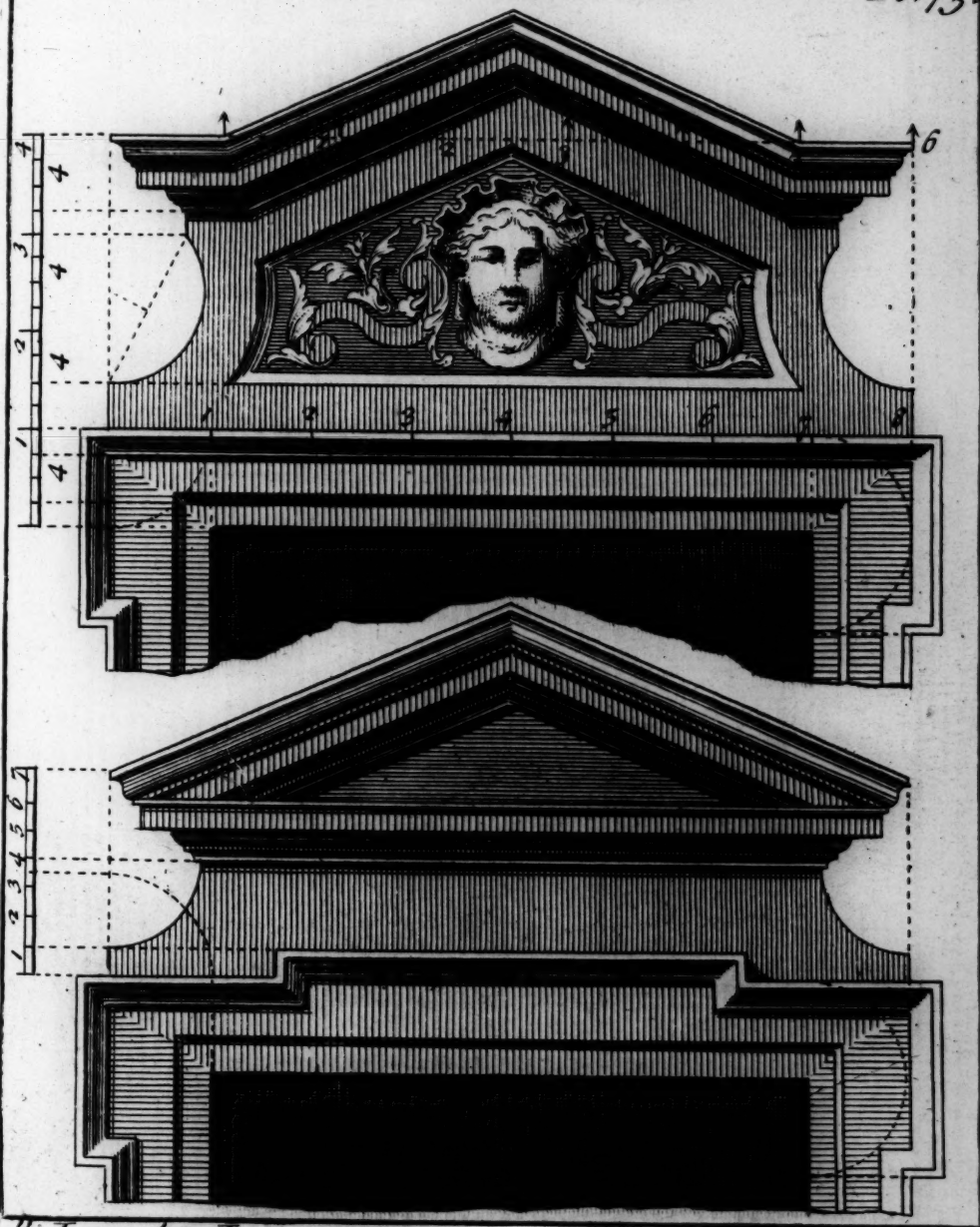
8

14 Parts

6

20 Parts

B. Langley Invent 1740.

T. L. Sculp.

B. Langley Invent 1741.   T. L. Sculp.

Pl. 75

8 parts

6

B.L. Inve.t
I.L. Sculp.

Tuscan

Dorick

Ionick

A

B

C

Feet 10 Inches.
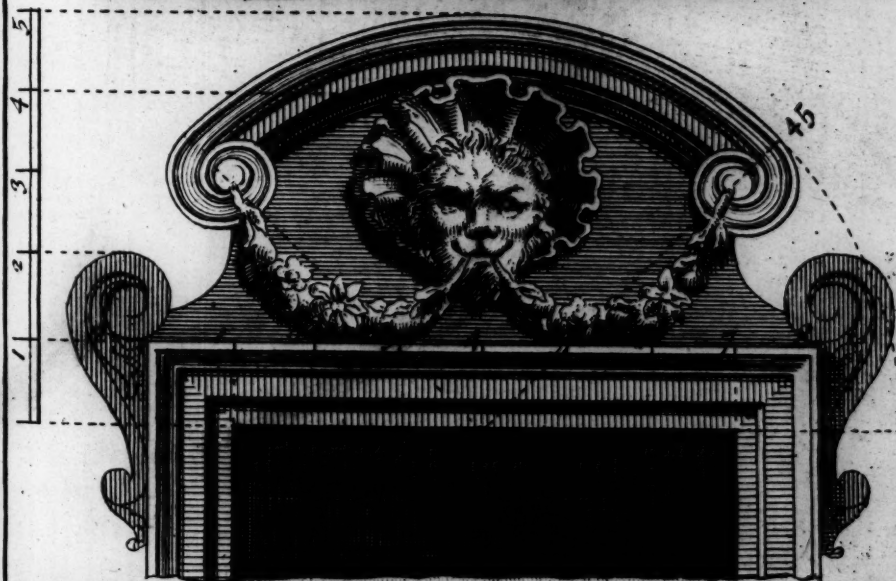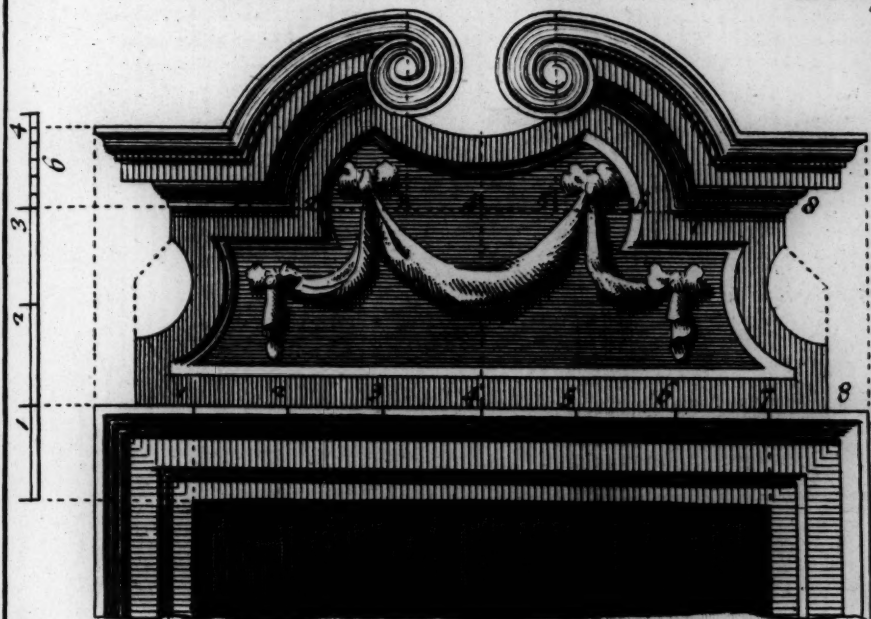
B. Langley Invent 1740.

T.L. Sculp
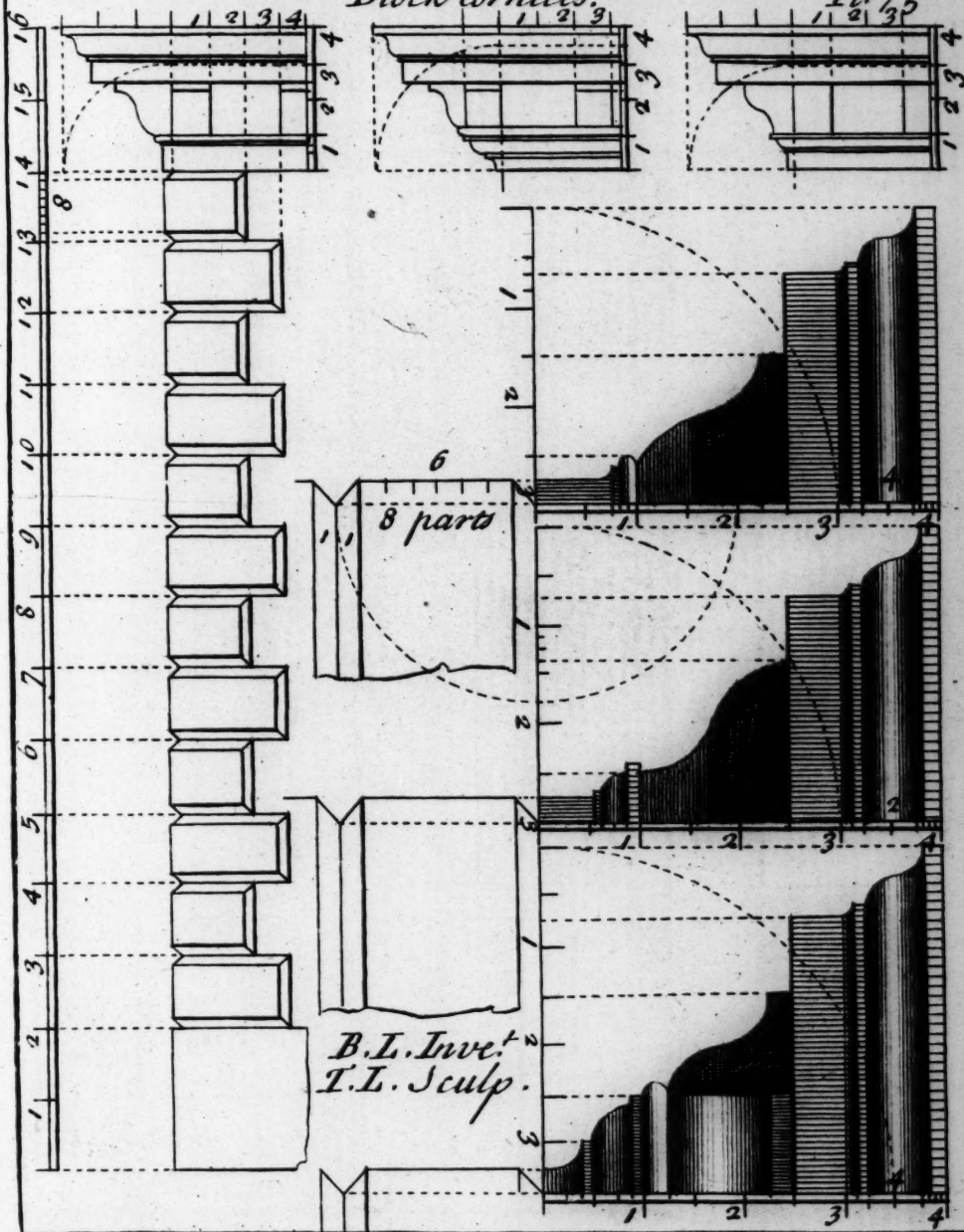
To Proportion Cornices to Rooms of any Height. Pl. 76

Tuscan

Dorick

Ionick

A

B

C

B. Langley Invent 1740.
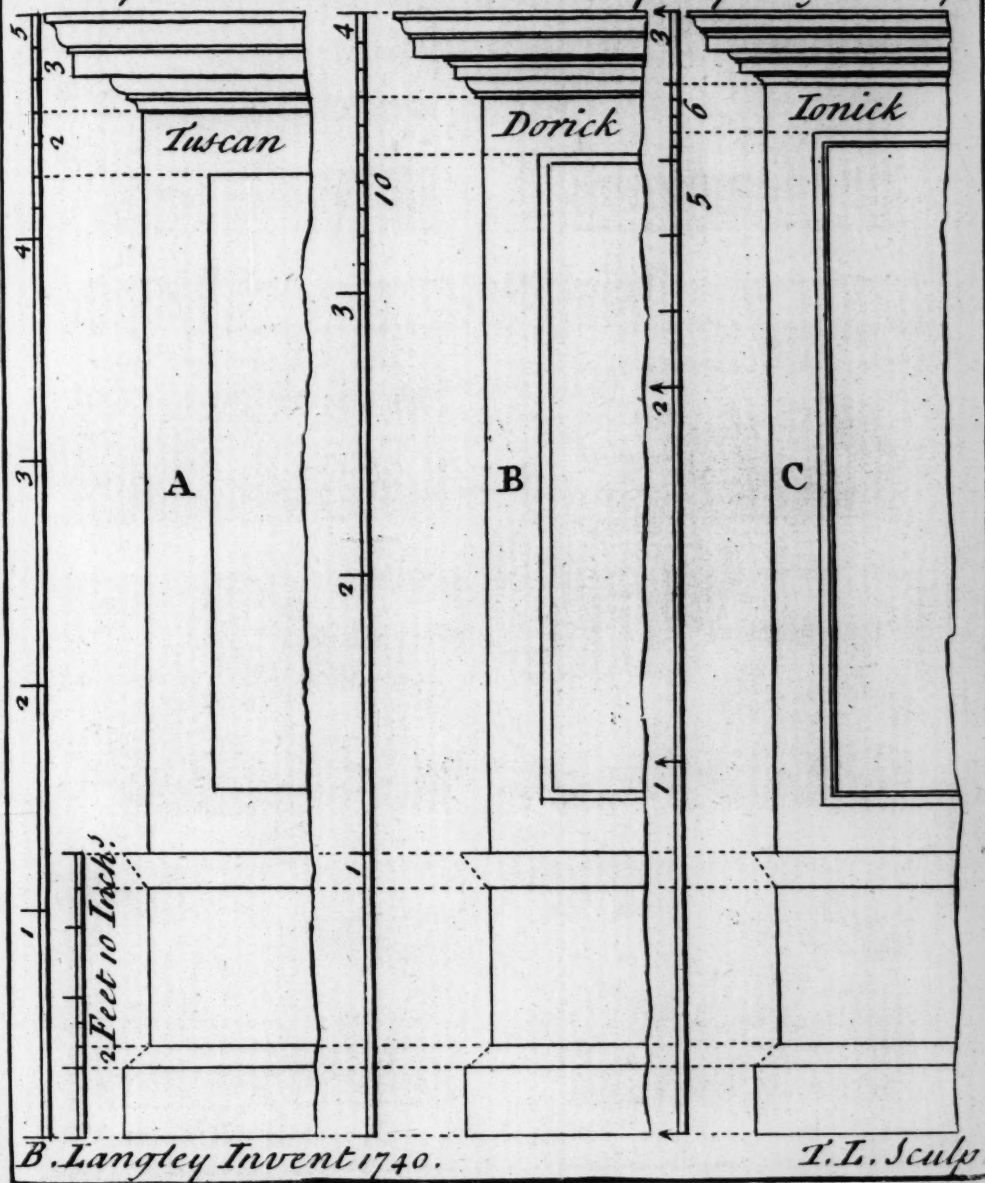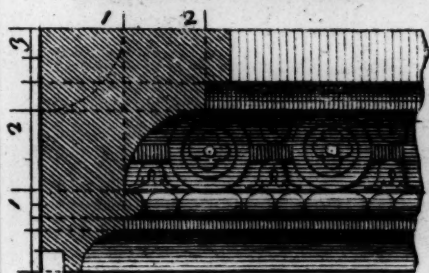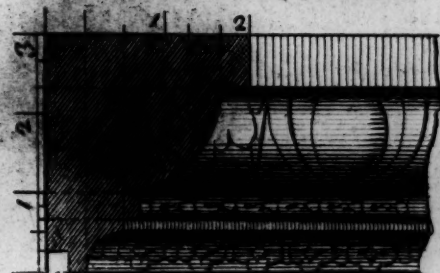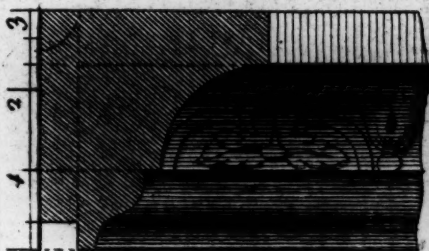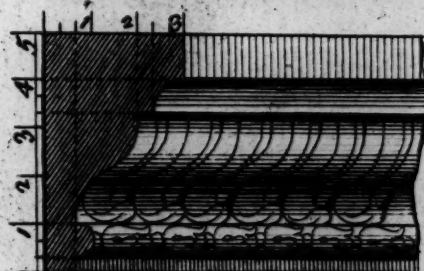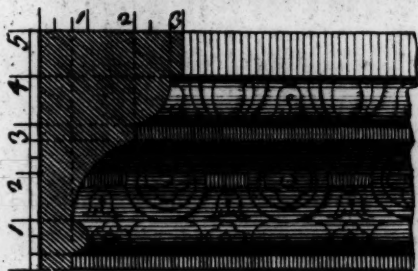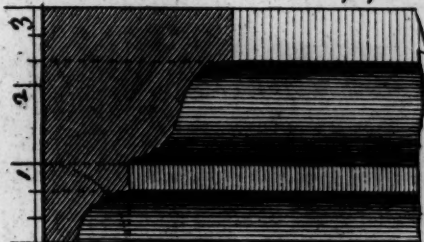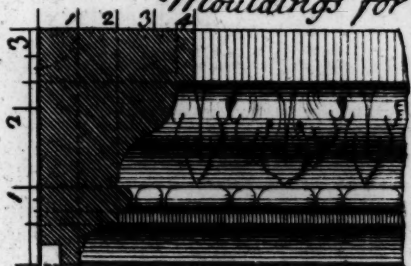
T.L. Sculp

Thomas Langley Inv. and Sculp. 1741.

Mouldings for Tabernacle Frames.   Pl. 78
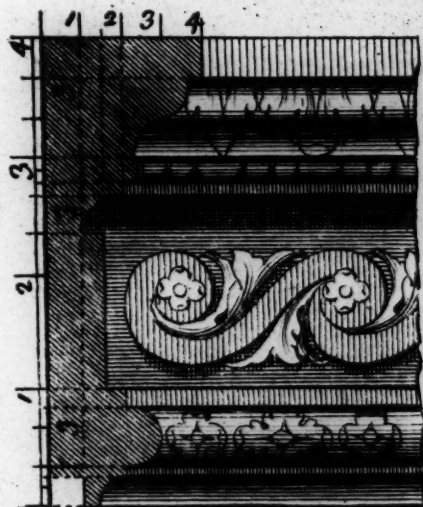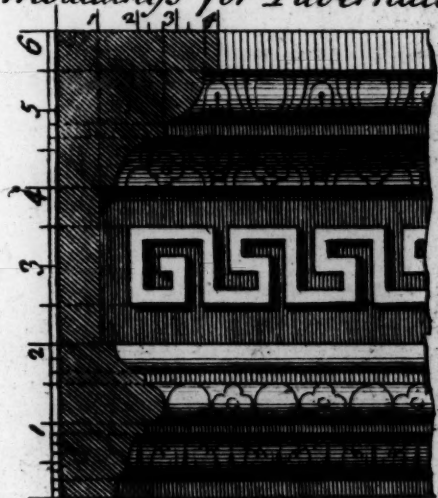
Thomas Langley Inv. and Sculp. 1741

A Cove ¼ of the entire Height.

Pl. 79
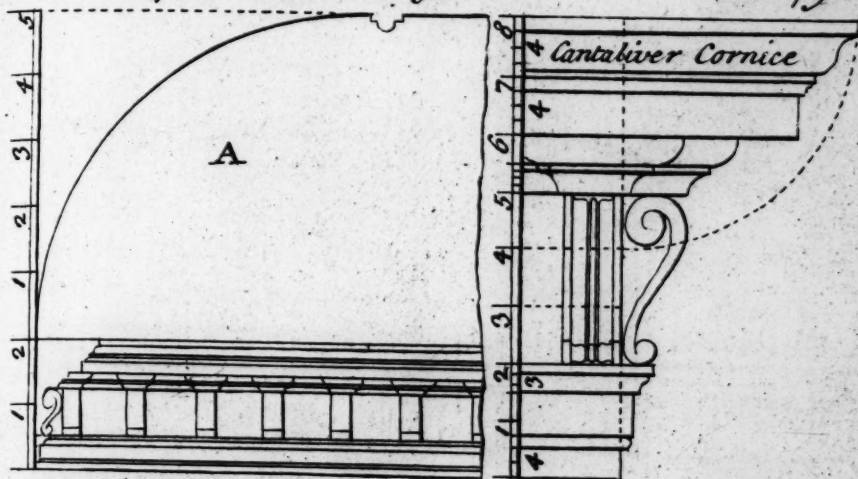
A

Cantaliver Cornice
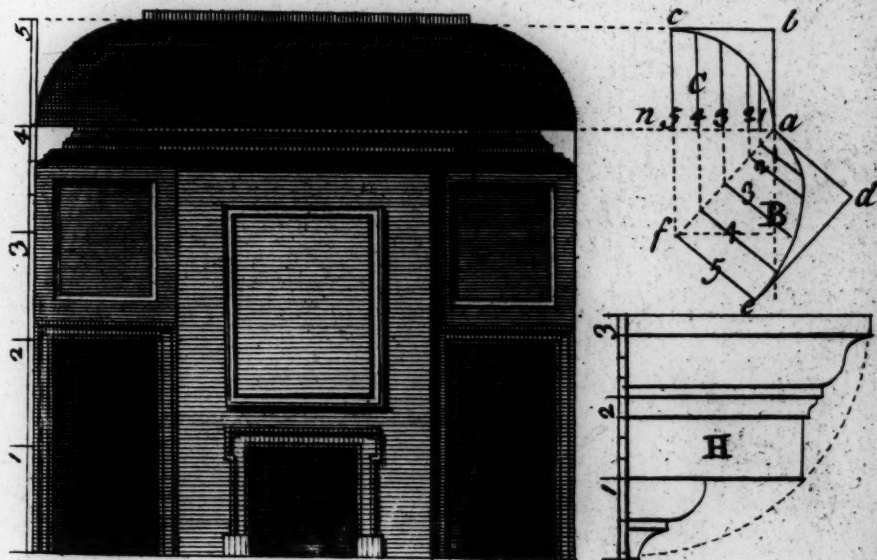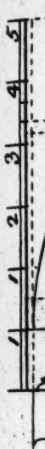
A Cove ⅕ of the entire Height.

c   b

c

n 5 4 3 2 1 a

f   d

B

H

5
4
3
2
1

5
4
3
2
1

c
e

d   1   2   3   4   5   6   b
a
1 2 3
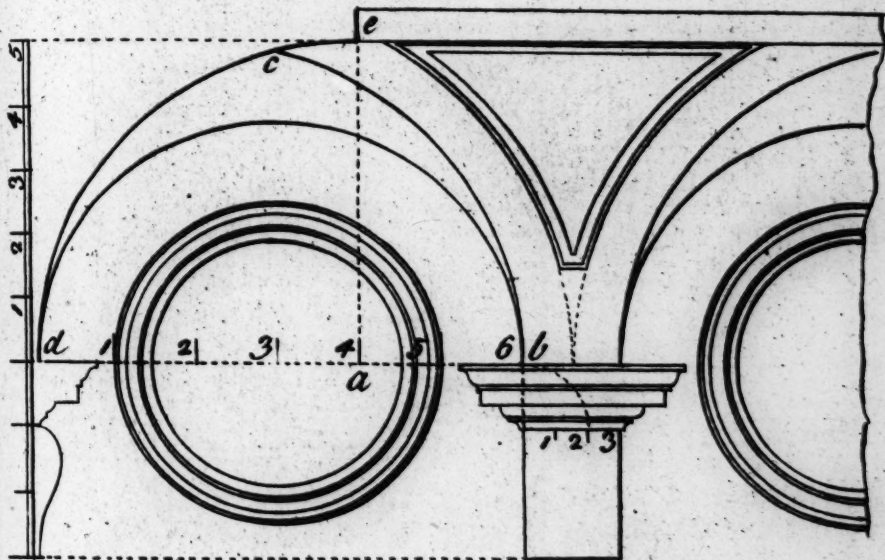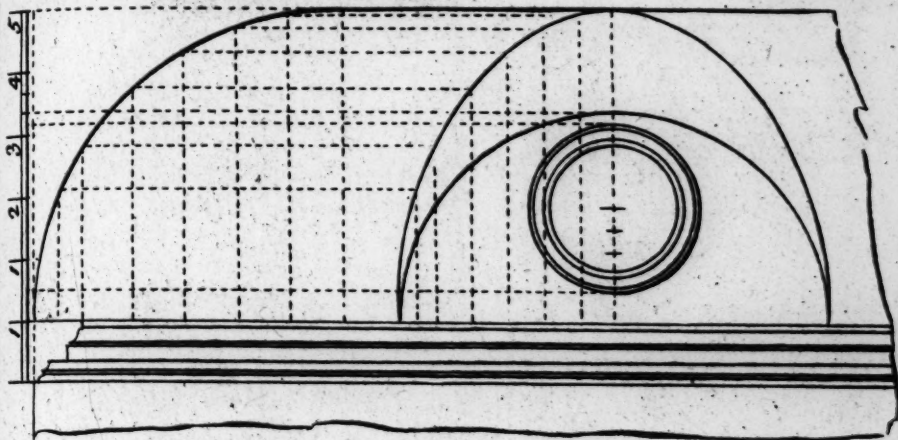
A Cove ⅓ of the entire Height.   A Cove ²/₇ of y̅ entire Height

Pl. 81

A

B

9 Diam. ½   5 Diam.

A Cove of ²/₉

D

B. Langley Invent 1741.
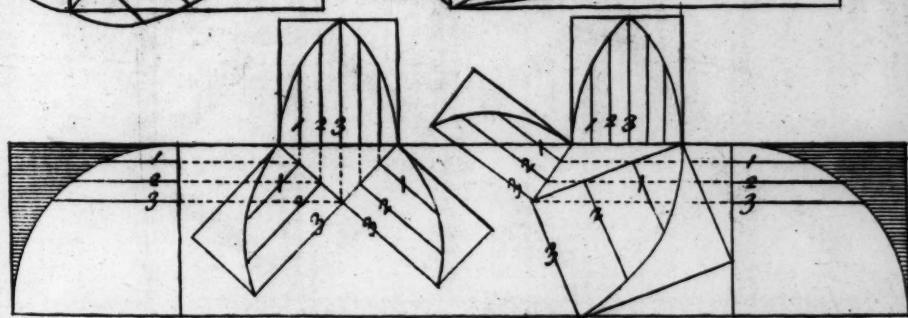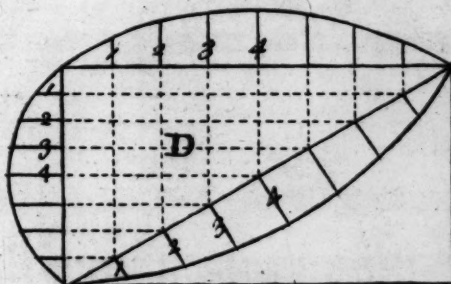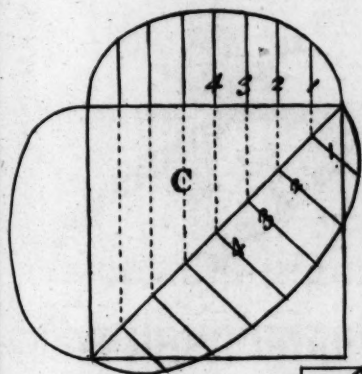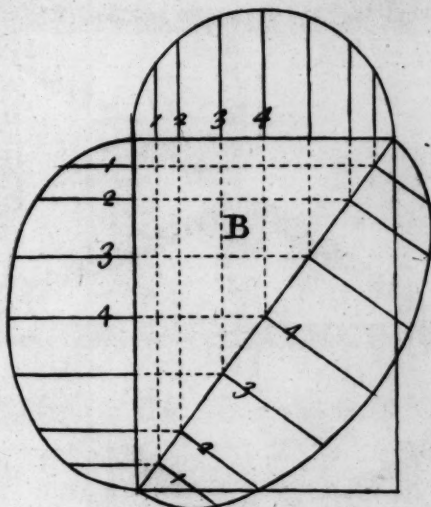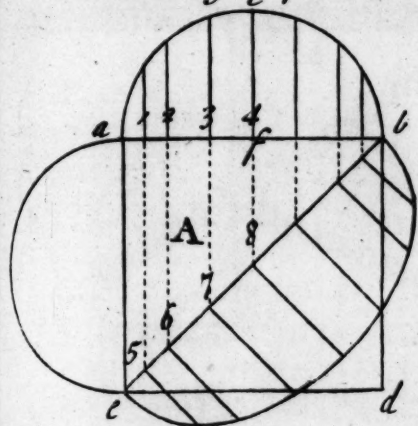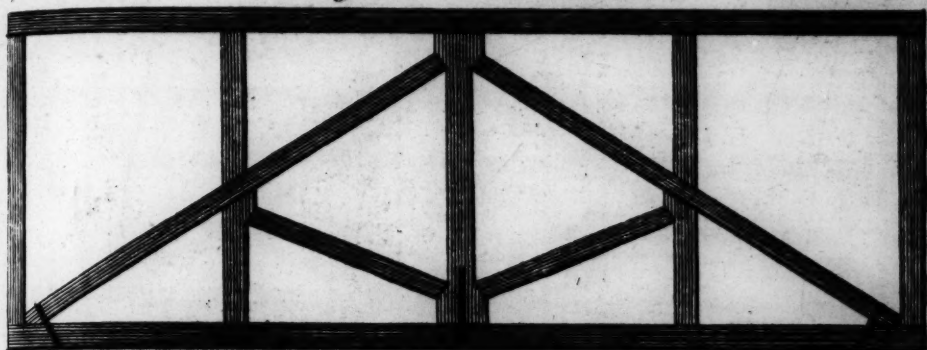
Bearing 40 Feet in y Clear.
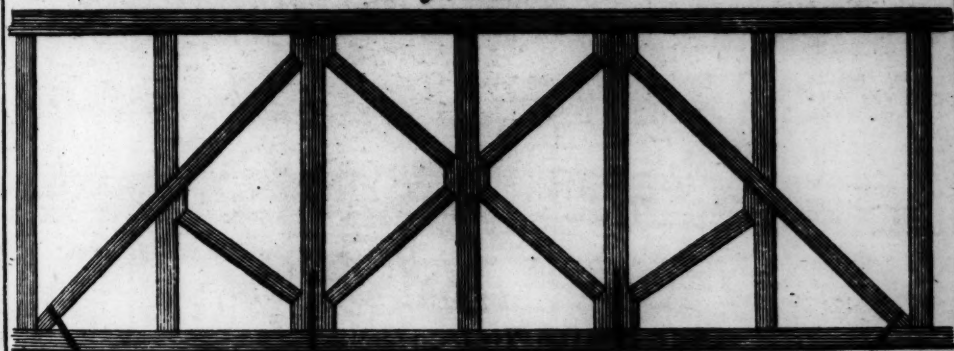
50 Feet.

B. L. Inv: 1741.   60 Feet.
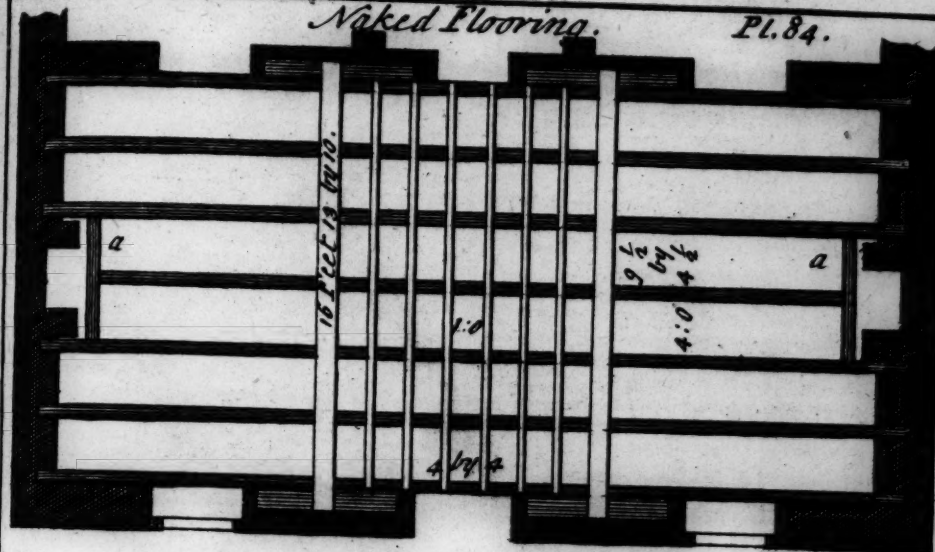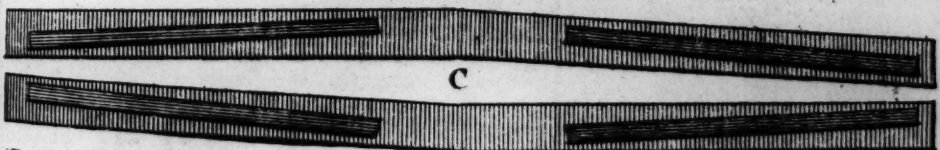
16 Feet 13 in 10.

4 by 4

4:0

1:0

9 :
by
4 :

4:0

a   a

Truss'd   Girders.

A

Length 24 Feet.

B

C

B. Langley Inv: 1741.

T.L. Sculp

Scarfings.

True Pitch

B.L Invent 1741.
T.L Sculp.

b   i

r   h   d   k   l

A

s   1   2   3   m

d   c

h

d

B   o

g   a   e c b   d

King Post

Strut

Beam
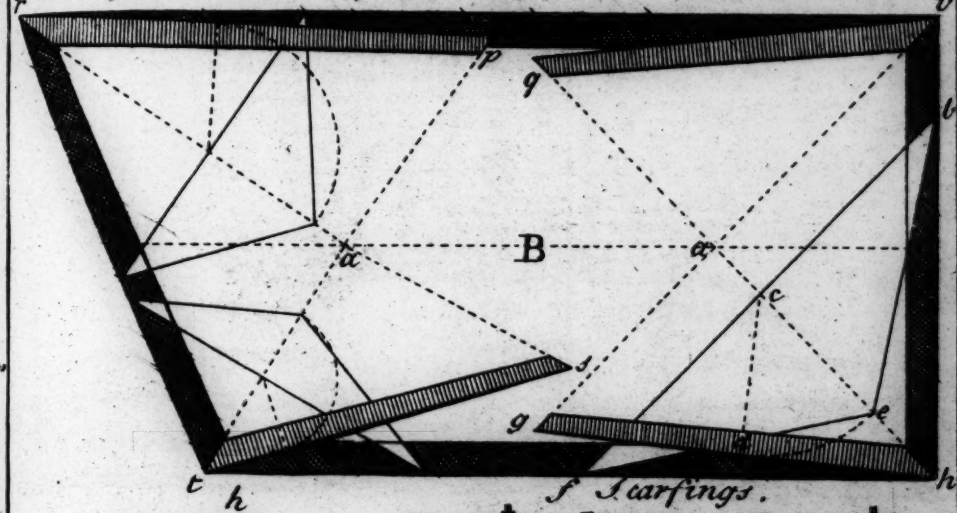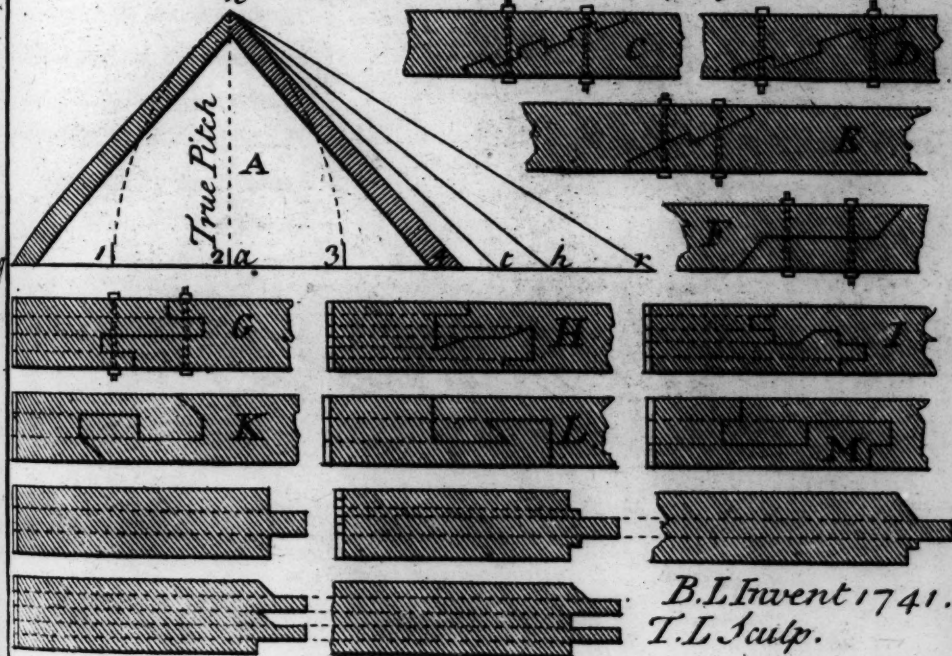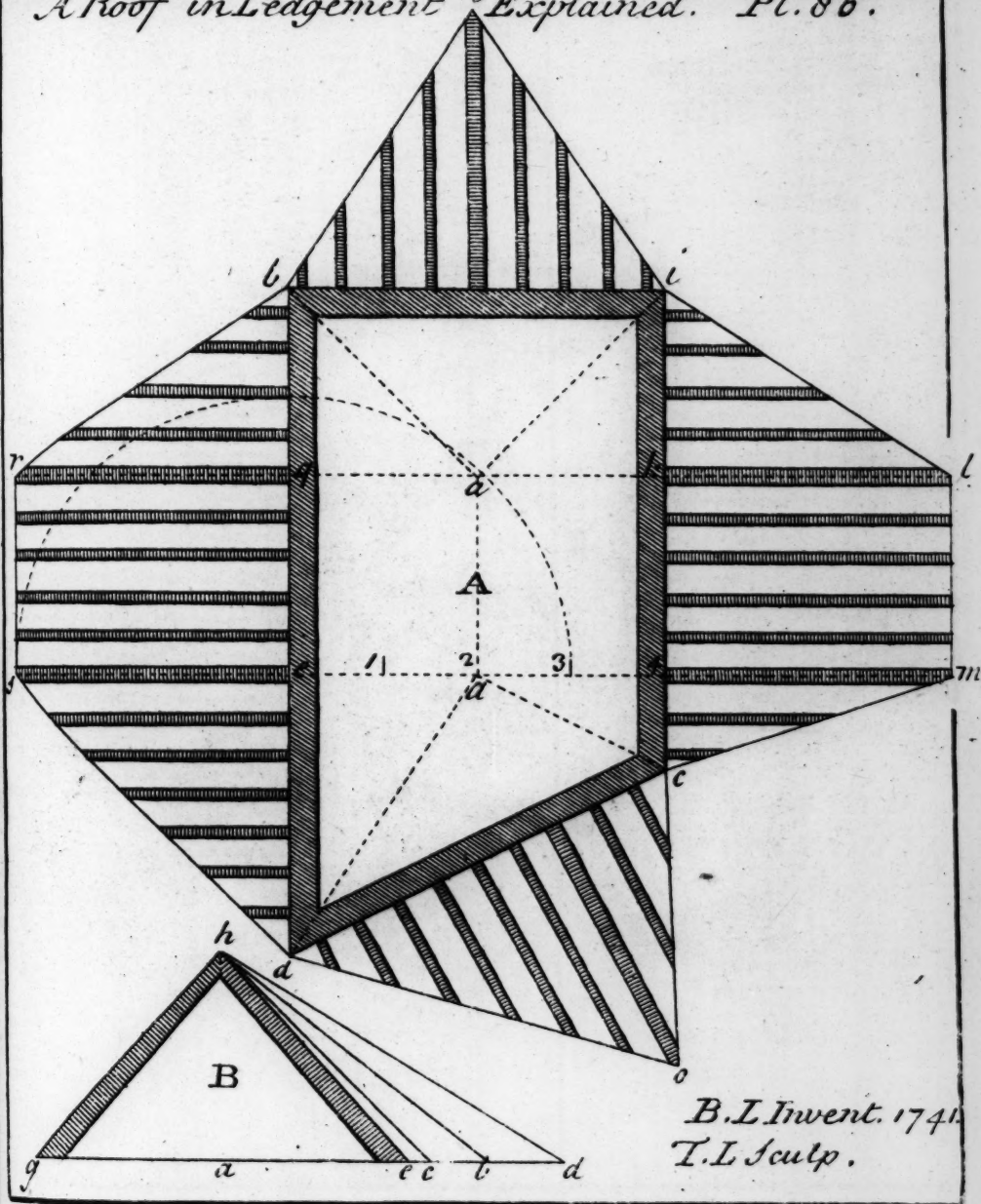
B. L. Invent 1740   T. L. Sculp.
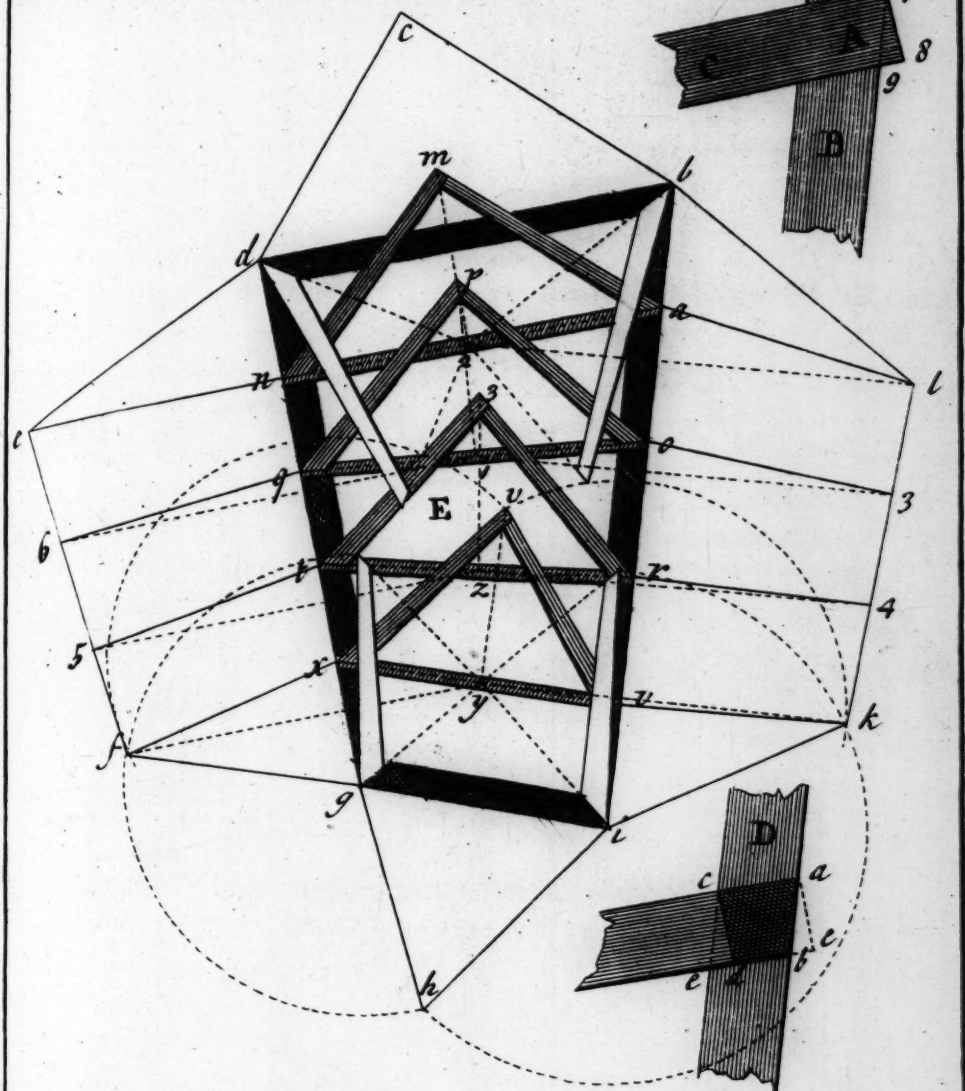
Truſs's for Principal Rafters.   *Pl. 89.*
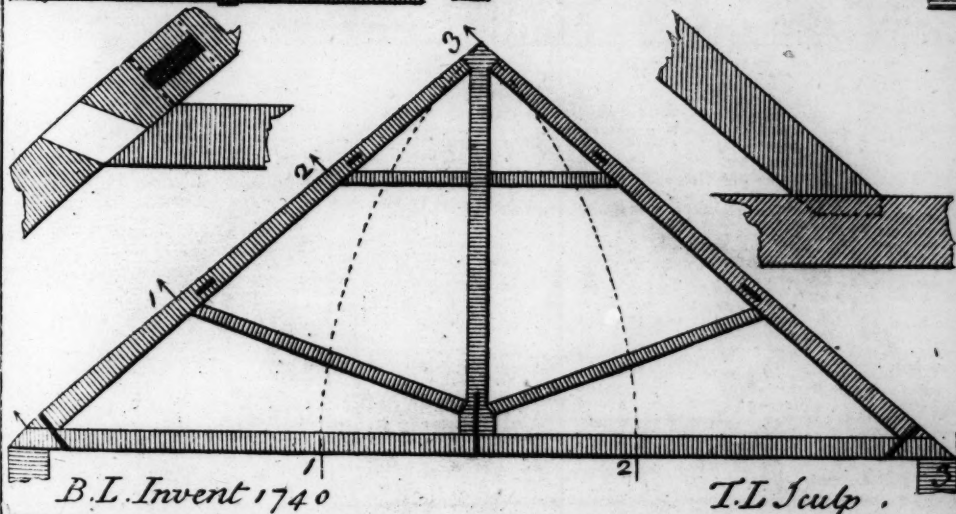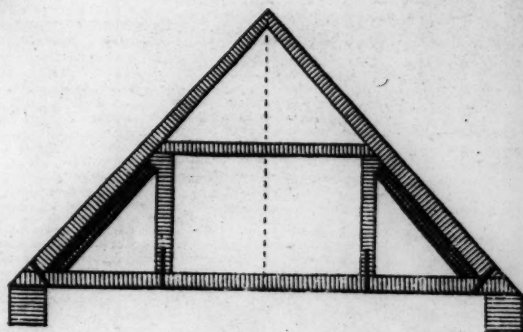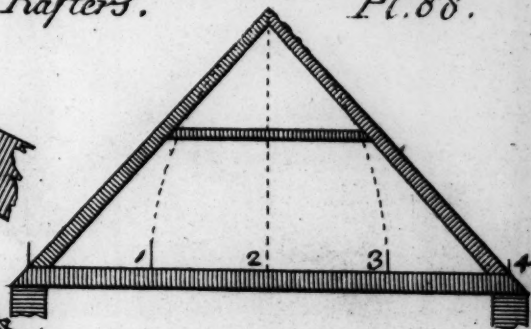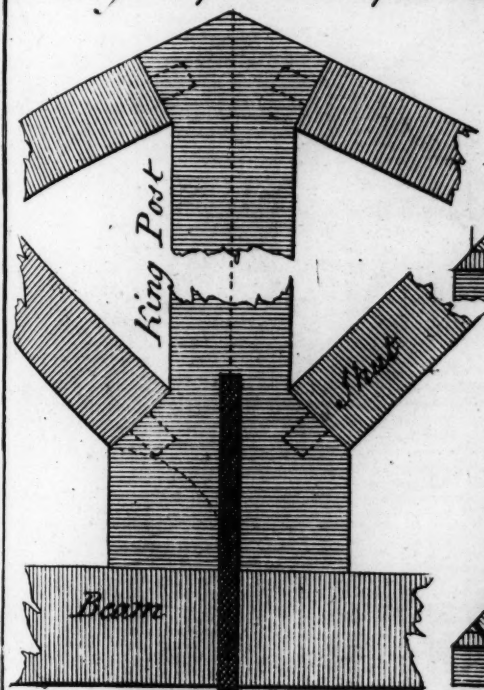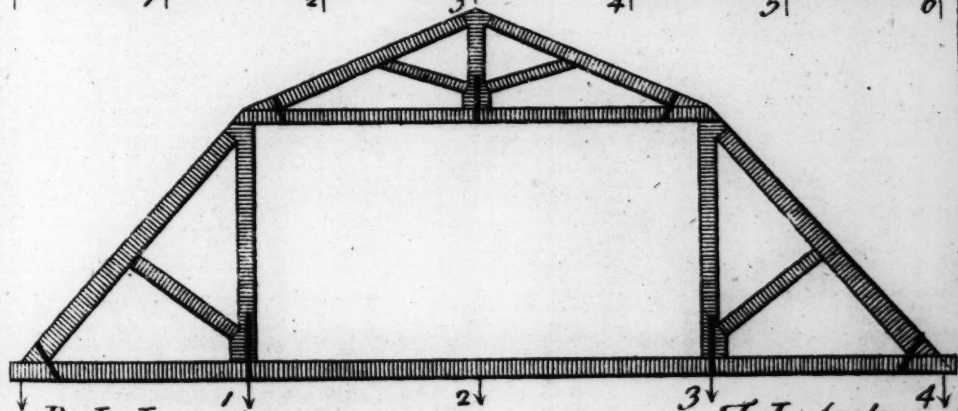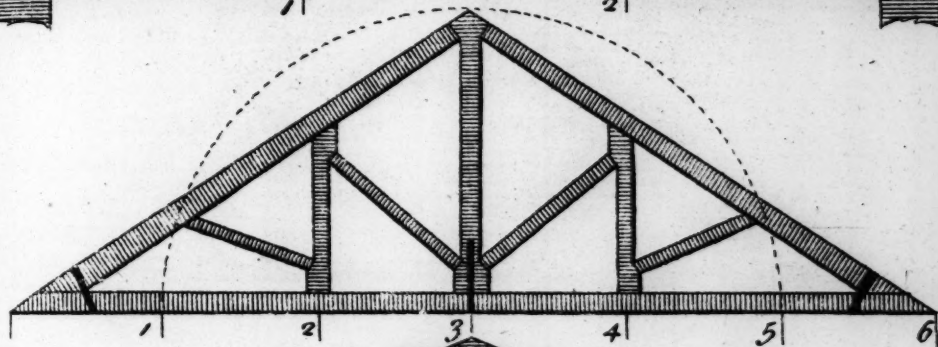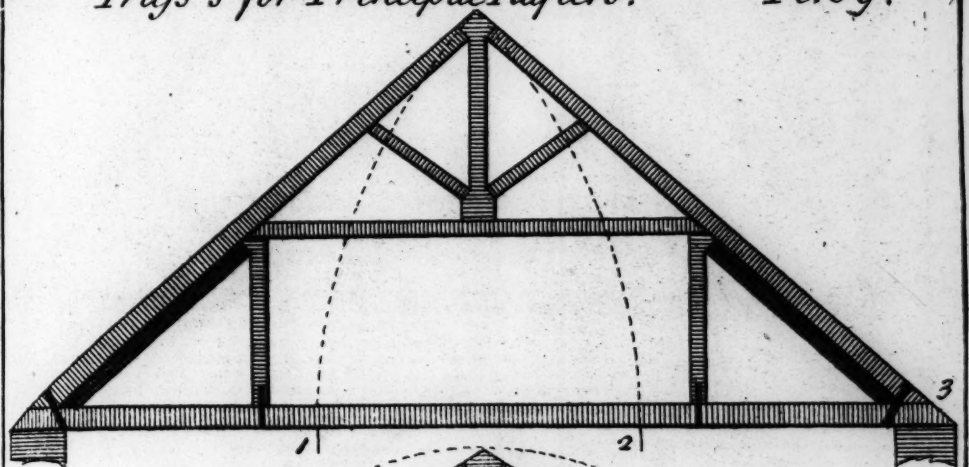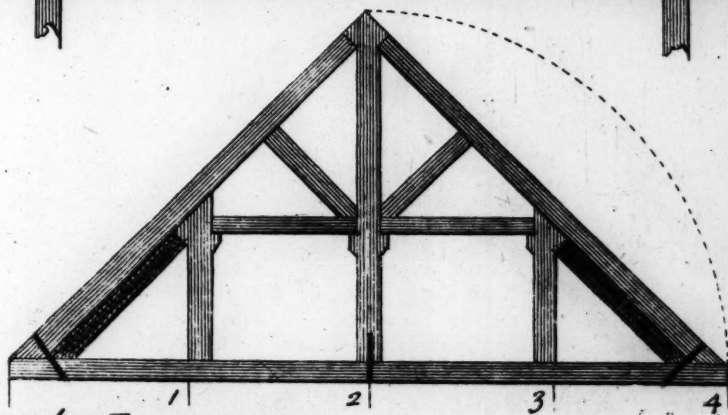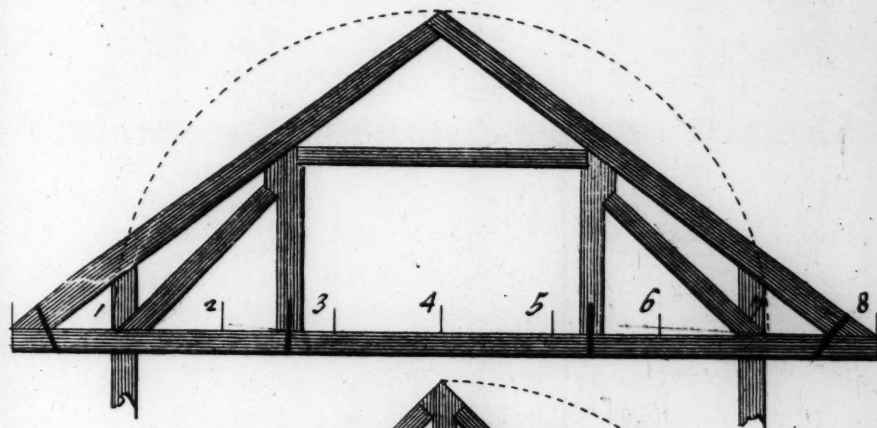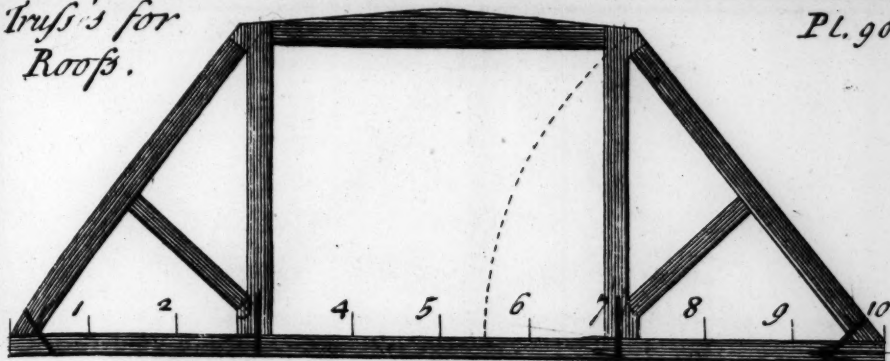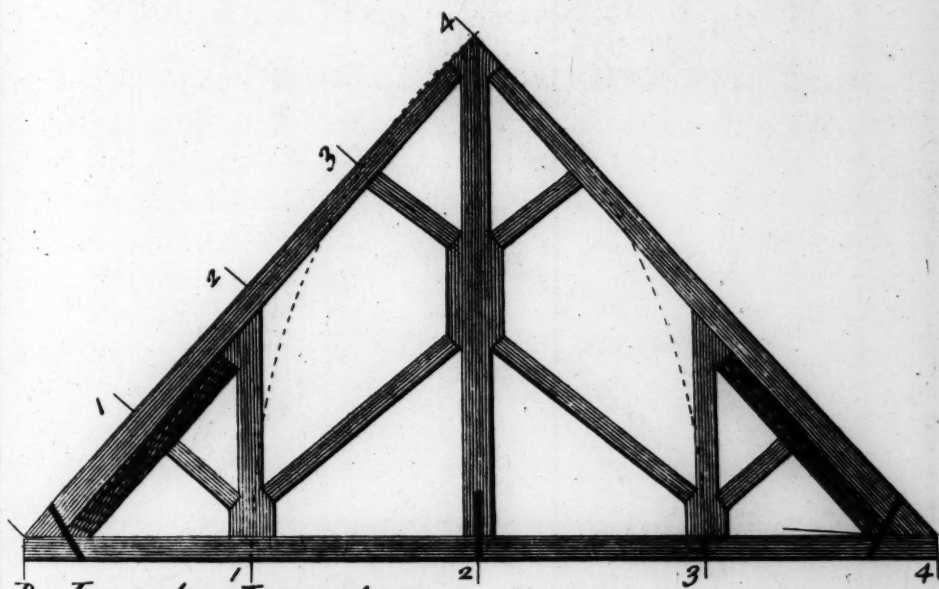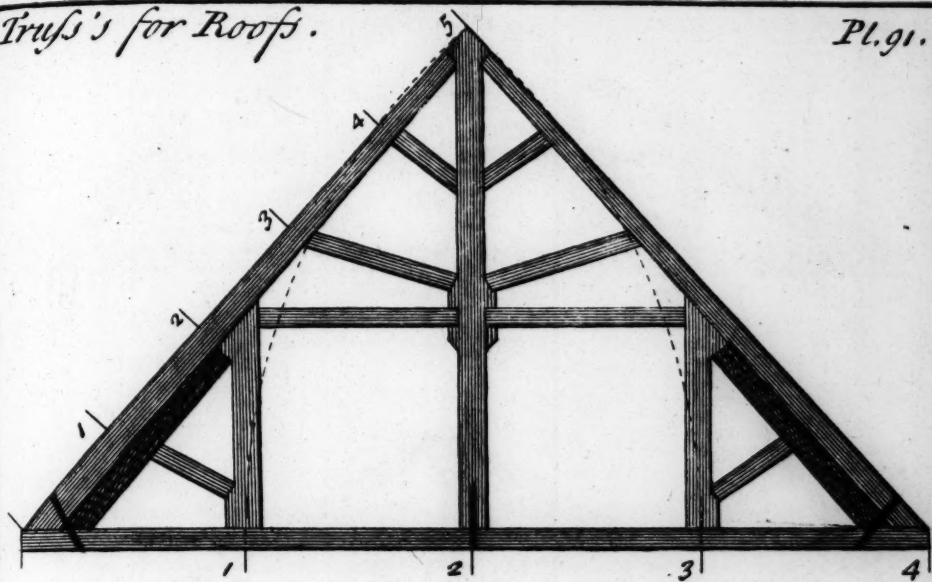
B. L. Invent. 1741   *T. L. Sculp*

Pl. 90.

Truss's for
Roofs.

1   2   4   5   6   7   8   9   10

1   2   3   4   5   6   8

1   2   3   4

B. Langley Invent 1741.

Pl.91.

Pl. 92.

1 2 3 4 5 6 7 8 9 10 11 12

1 2 3 4 5 6 7 8 9 10 11 12

1 2 3 4 5 6 7 8 9 10 11 12 13 14

B. Langley Invent 1741.

1   2   3   4   5   6   7   8

1   2   3   4   5   6   7   8   9   10
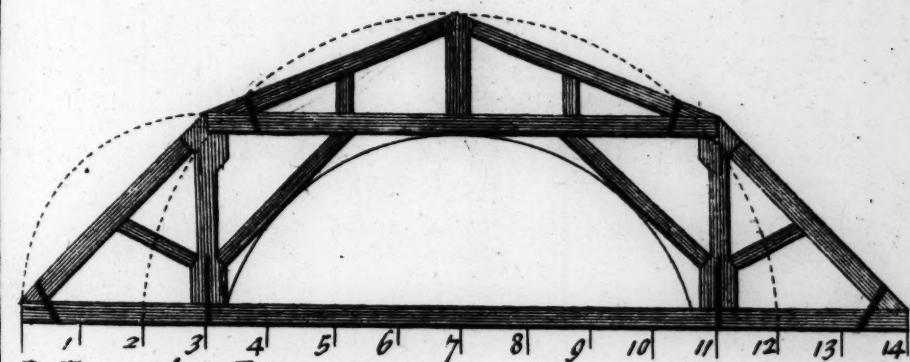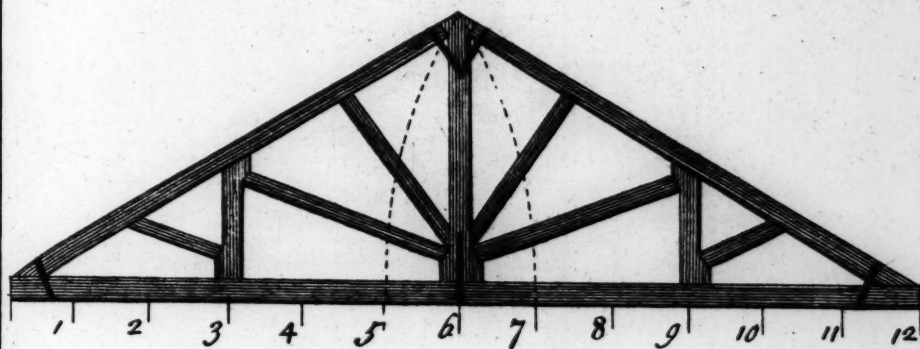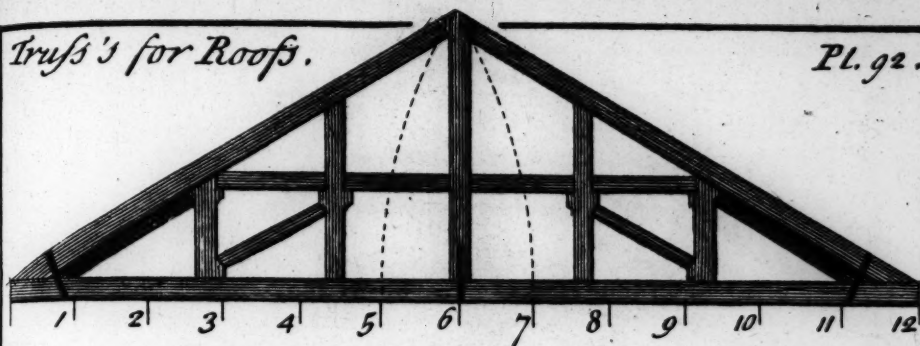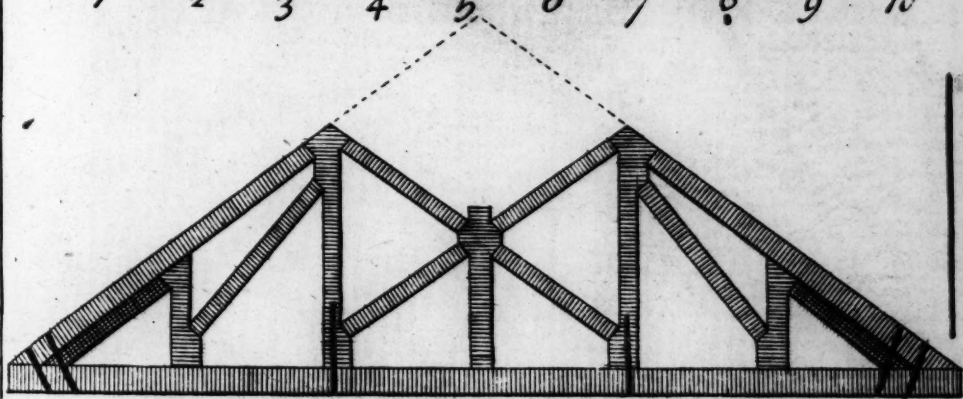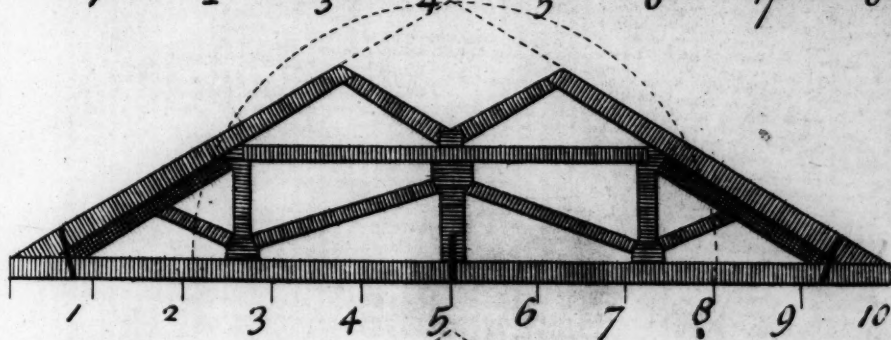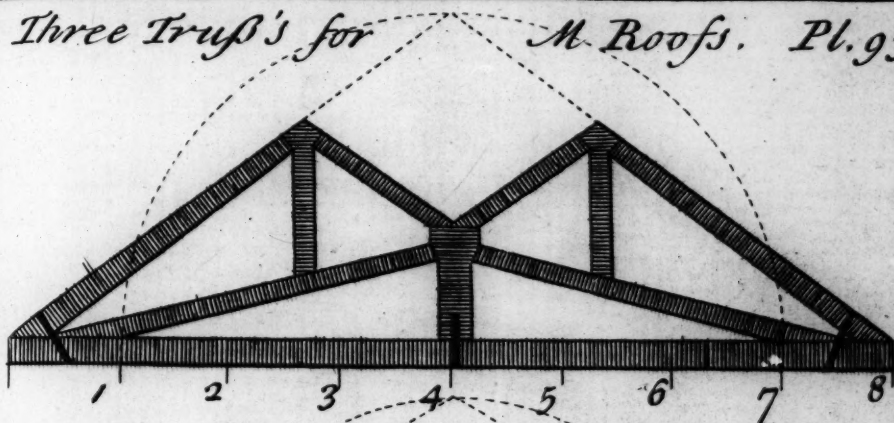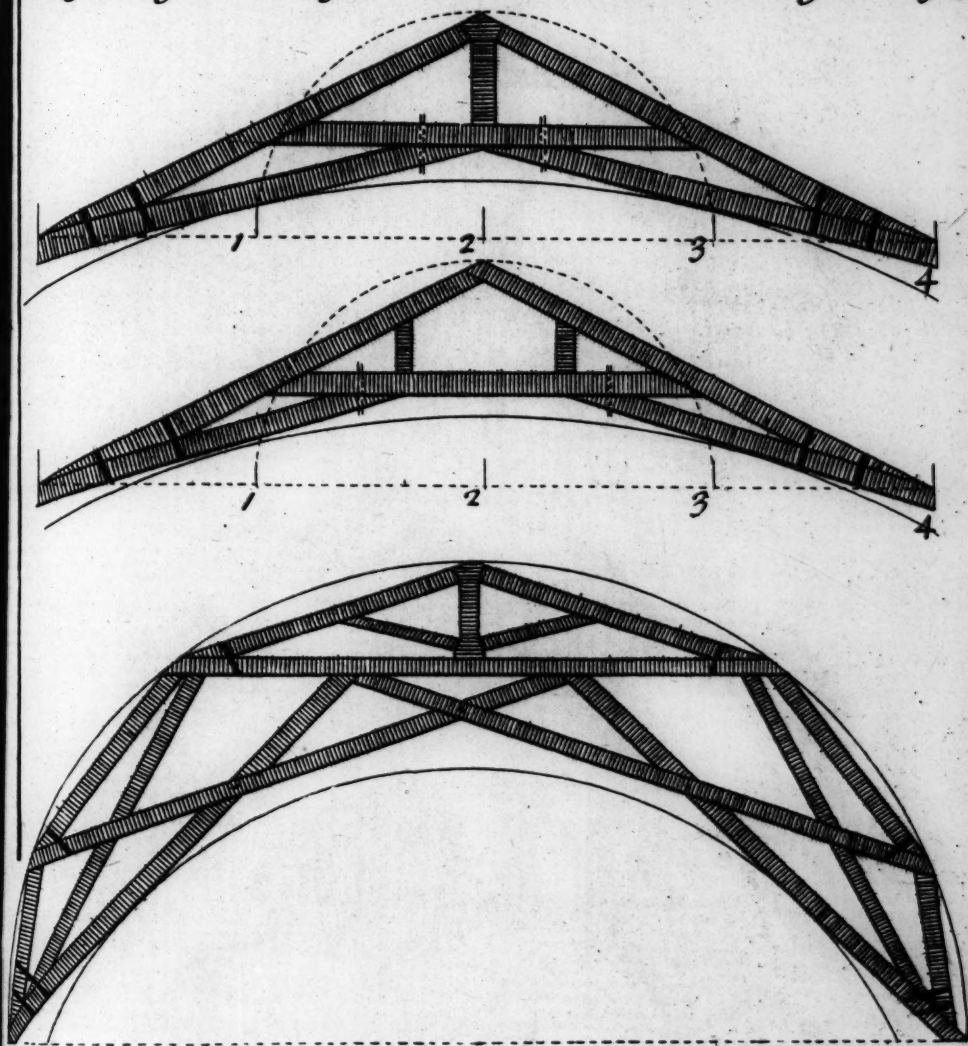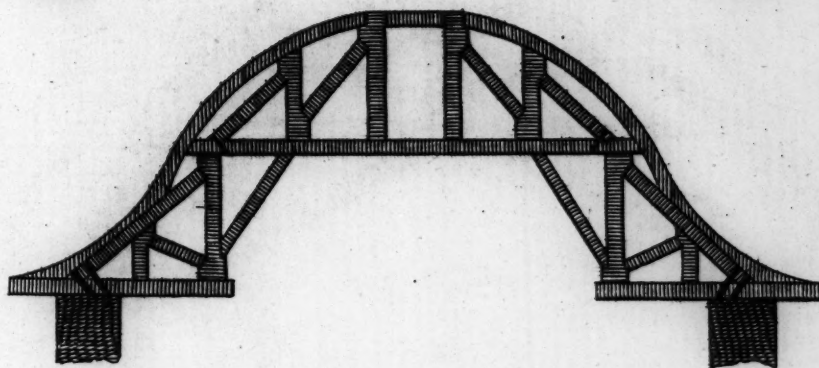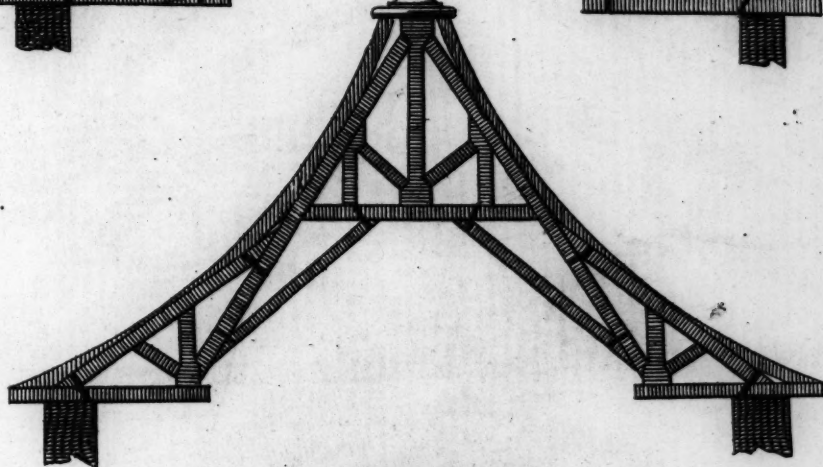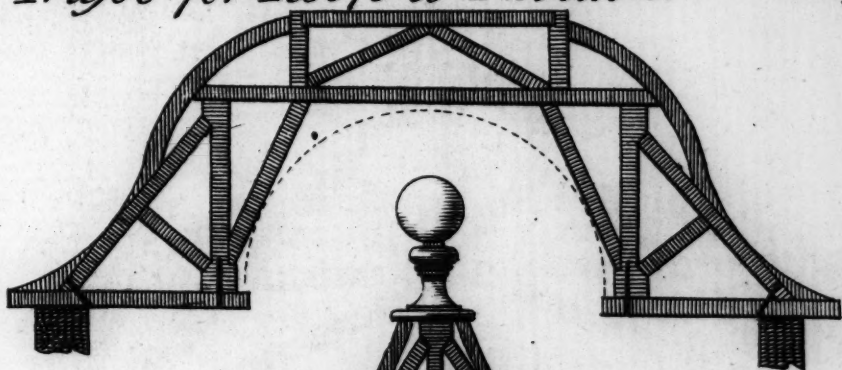
Pl. 96
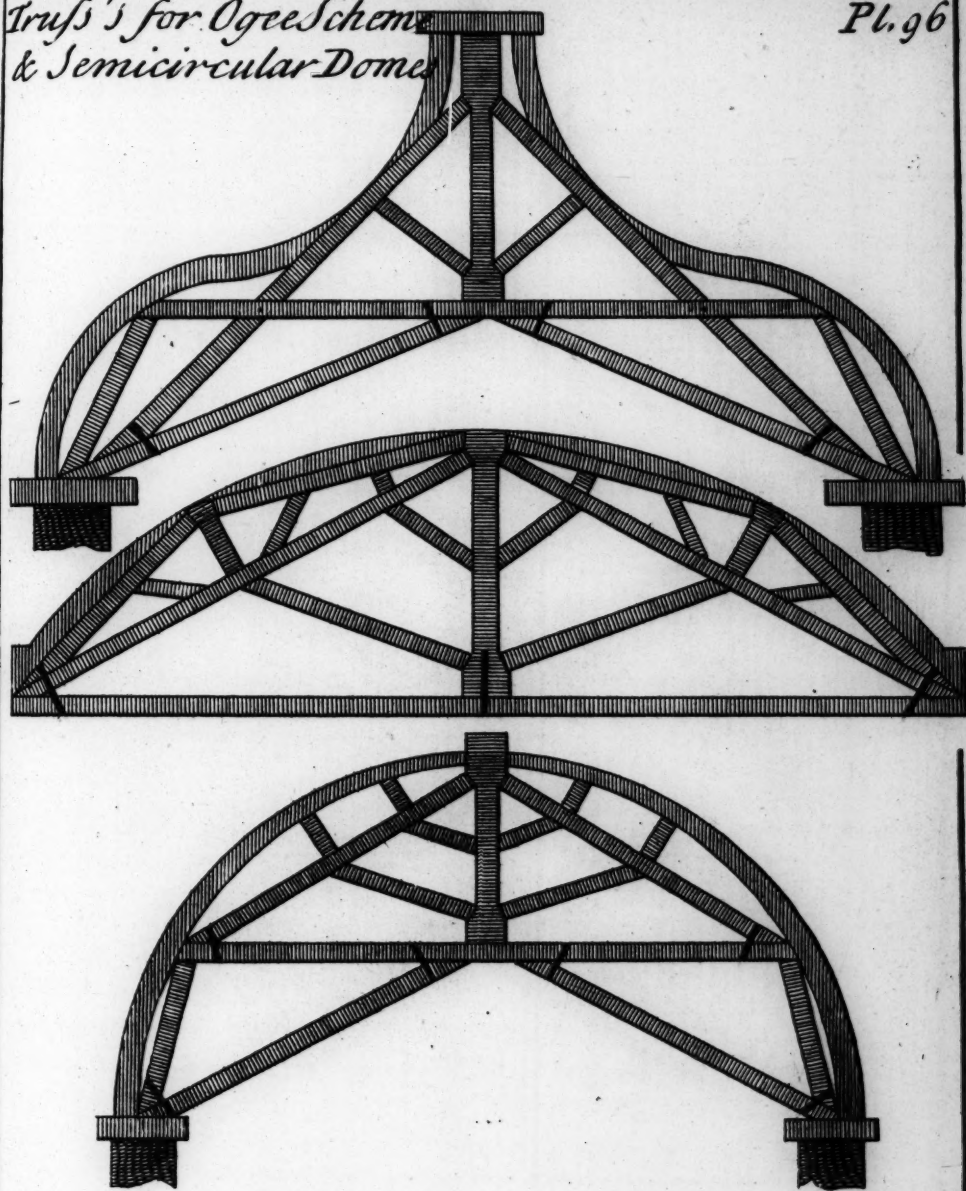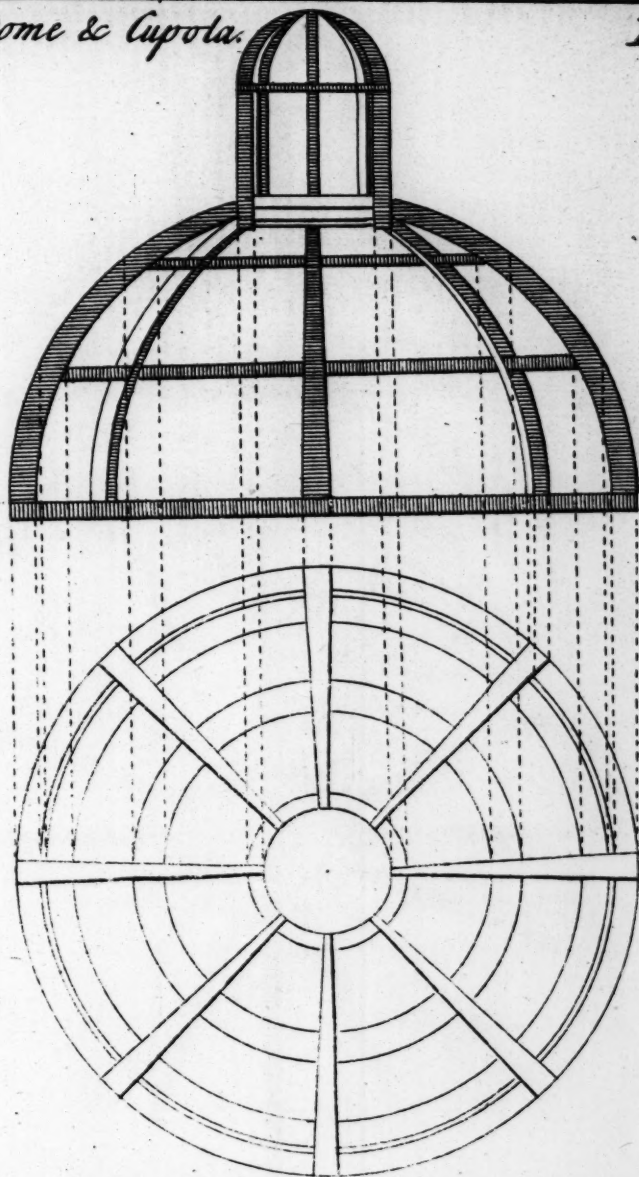
Truss's for Ogee Scheme & Semicircular Domes

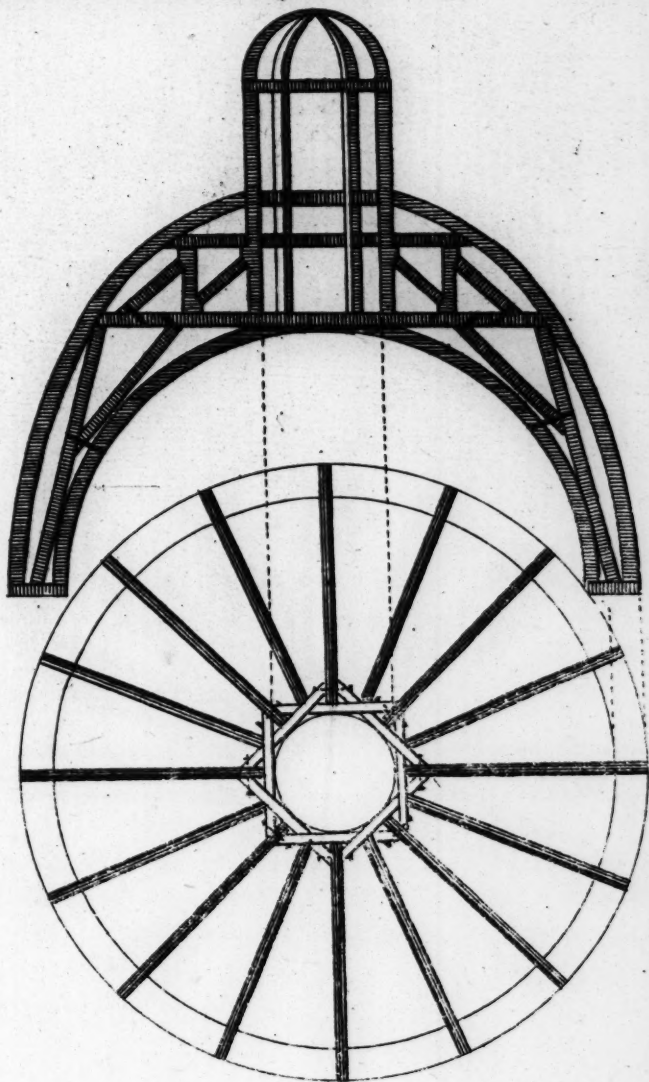Pl.97.

A Section of the Dome of St Pauls London. Pl. 99.

The Painted Dome by Sr Jam: Thornhill

Semi Plan.

12 parts.

B.L. Delin.

T.L. Scul.